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ABSTRACT

Based on interviews and correspondence conducted during 1981, this report describes British library and book trade plans for expansion of their internal order processing systems to include the eventual exchange of data through the use of telecommunications. Comparisons are made between the situation in England and the United States. The report begins with a glossary of terms and a review of the literature on publishing, library acquisitions, and electronic data transfer. Information is presented on automation of the library acquisitions functions, the views of librarians on automated acquisitions, and the development of acquisitions systems among library cooperatives (networks). A list of librarians' requirements for automated acquisitions is also provided. A discussion follows of the present levels of automation among library suppliers, retail booksellers, and publishers; the bookseller response to library requirements for electronic interchange of data; and tradewide cooperation on machine readable codes and Teleordering, an automated system currently used by British booksellers. A final section of the report examines problems in developing library/bookseller systems and presents short-term and long-term forecasts for this market. Appendices comprise a list of persons participating in the study and an extensive bibliography. (Author/ESR)

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AN EXAMINATION OF ELECTRONIC LINKS BETWEEN THE BOOK TRADE AND LIBRARY ACQUISITIONS SYSTEMS

Sharon C. Bonk

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1981

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The study was carried out during 1981 while the author was on leave from the State University of New York at Albany and the holder of Blackwell's Nancy Stirling Lambert Scholarship at the College of Librarianship Wales. Although information and assistance was given by librarians and members of the book trade, the opinions expressed are those of the author who bears responsibility for them.

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INTRODUCTION

SCOPE OF THE REPORT

This report investigates library and book trade plans for expansion of their acquisitions and order processing systems to include exchange of data between them by use of telecommunications. It is in the automation of bibliographic information files and order placement and fulfillment routines that libraries, booksellers, and publishers may be seen to have individual purposes and processes but also to have similar approaches to data handling and to process much of the same data. The three parts of the publisher/bookseller/library chain of creation and use of bibliographic data have separately concentrated their individual efforts on internal systems of organization, management information, and service to their customers/users. It is now possible to develop telecommunications based procedures to use in one part of the chain data created in another, without the need for multiple paper based transcriptions of that data. The bibliographic content of the computer data files, the existance of a consistent customer/supplier base, and the continual and repetitive nature of the transactions between the three groups make the electronic transmission of data between them an attractive possibility.

Such systems are already under development in the book trades of Germany, the Netherlands, the United Kingdom and the United States, and in development between libraries and booksellers in the United Kingdom and the United States. It is my purpose to investigate the future direction of electronic communication between libraries and the booksellers in the United Kingdom and to report to librarians on the developments leading toward this type of communication in the trade, the problems and barriers which may prevent that which is technically possible from being implemented, and to assess the likely result from what is known of the technology, economics, and library and bookseller plans.

I see the need for such an investigation and report as an acquisitions librarian who is faced with planning for automation within the context of my institution but also within the context of developments in the book trade and in telecommunications. Other librarians share both my concern and my need for information on what new capabilities exist within the book trade and how they will be extended to benefit library acquisitions procedures. Surrounding each specific institutional situation are a myriad of words, ideas, promises, predictions, and plans coming from publishing industry visionaries, library network spokesmen, library booksellers, software systems suppliers, and other librarians. This study arose because of the non-specificity of most of the words and was coalesced by the emergence of three commercial attempts to direct the development of the use of telecommunications as a substitute for traditional files, paper, and post in

book purchasing and the library use of a database and programs not created or designed by the library. It is hoped that the results of this study will assist acquisitions librarians and library systems analysts in the designing of automated acquisitions systems by supplying information for them to assess the possibilities created by automation in the book trade. Library booksellers should also find the report of interest especially those who have yet to consider this area of service.

The report is Anglo American in its most general outlook for the concerns of librarians on both sides of the Atlantic are similar, and many of the existing efforts by cooperatives and commercial firms are similar in scope and goals if not in detail. However, since the investigation was conducted in the United Kingdom, its focus lies there. All references are to British libraries and book trade unless otherwise qualified. American developments or considerations are included as they are related to or of use and interest to the British situation.

I have assumed that my audience will have a basic familiarity with computer applications in libraries and a working knowledge of the concepts and terminology. The reader who is unfamiliar with library automation is referred to basic texts such as Tedd, An Introduction to computer based library systems (Heyden, 1977) or Salmon, Library automation systems (Dekker, 1975) and introductory summaries for library managers such as Boss, The library manager's guide to automation (Knowledge Industry Publications, 1979) and Woods, Managing library computers (MCB Publications, 1981).

Library book selection philosophy and practice and editorial decisions on the quality and types of books to be published are not considered in the report. It is acknowledged that these important areas of qualitative judgement relate to institutional organizational purpose and objectives and in turn set the operational parameters for the procedural, technical and financial activities under investigation. Book purchasing by libraries cannot operate in a vacuum, nor can it be the activity around which all staff attention and financial resources revolve. It must be efficient and meet the needs of the library to be effective. The book seller's title mix and turnover are directly related to internal efficiency as well as knowledge of customers and books published. Similarly, publishers order fulfillment is important to profitability and thereby indirectly influences the numbers of titles to be published and purchased.

It is not the purpose of the report to compare actual commercial automated acquisitions systems now under development or on the market. There are so few specifics of developing systems available to compare and fewer functioning for this type of comparison to be of any long term value to British librarians.

However, some comparison of library cooperatives' approaches is made since their systems designs feature prominently in so many libraries' plans. Those systems available for adaptation, purchase, or through network membership in the United States have recently been summarized by Boss and Marcum in Library Technology Reports (March/April, 1981). In Britain, systems design has not progressed far enough across the commercial sector or cooperatives to make this type of comparison useful at this stage, but the Library Association or other body should provide such a service in the near future as momentum begins to develop and more choices for automated acquisitions systems become available for use. Although two American booksellers offer acquisitions systems, no British bookseller currently offers one. It should be made clear that my interest is in all computer based data transfer to and from booksellers. These may ultimately develop into complete automated acquisitions systems for some libraries, but they are by no means the only type of library/bookseller interface that will develop. This report, however, will not discuss the periodicals and serials control systems also emerging in the market place. It is recognized that they will present another range of possibilities and complications to designers of library systems especially where the systems overlap in serial orders for monographic publications.

The report is predicated on these currently observable conditions.

Libraries are increasingly planning to automate their traditional book and serials ordering, receiving, fund accounting functions and link them interactively with other internal systems already automated or planned.

Library booksellers are also in the process of installing, if not already in possession of, interactive order, receipt, and accounting systems which are designed to support customer service as well as meet internal needs.

Publishers in the mid-to-large-size are also installing online systems to link their production, order, distribution, and accounts information.

Publishers and booksellers in Britain and America are attempting to provide for ordering by electronic means.

There exists in machine readable form the components of a bibliographic chain of information useful in book sales/purchase transactions and which may be transferred between the groups by telecommunications methods,

The state of technology and software development is such that it is possible to provide interfaces between systems which would make this interchange of bibliographic and other order related data possible.

Those statements summarize the conditions and environment out of which any electronic links between libraries, booksellers, and publishers may be made. From this environment are drawn the research questions which were investigated:

Do data handling systems in the book trade, linked to libraries acquisitions systems via telecommunications, have the potential to be of assistance to libraries in their acquisitions of books?

Are there mutually beneficial reasons for libraries and the book trade to implement such links?

METHODOLOGY

The existing systems and planning in the areas related to the study together with persons with direct experience and responsibility in this area were identified from a review of published literature on library acquisitions systems and book trade computerization. Other names and sources were obtained from program officers of the Library Association, Aslib, British Library Research and Development Department, British National Bibliography Research Fund, and from College of Librarianship Wales faculty. I then carried out a series of interviews and correspondance with representatives from libraries, booksellers and publishers who are presently involved in operating or planning systems which have the potential to link with other parts of the book trade or libraries. I also interviewed persons who did not have a specific commercial or library base, but who could give professionwide or tradewide views in this area. My intention was to determine what levels of automation already existed in each segment and what attitudes toward, or plans for, linking there were among the groups. I also hoped to determine what factors would facilitate or inhibit the formulation and use of such links. Sets of questions and discussion topics were developed for each group of interviewees. The questions were designed as discussion stimulators to reveal attitudes and plans and to insure that the same material was covered in all the interviews of librarians, booksellers, and publishers. It was not my purpose to gather statistical or other quantifiable information. Through additional interviews with persons from commercial enterprises serving the book trade in consultancy, system development, or information services and with cooperatives' staff, other information was gathered. These interviews were planned to gain specific information about an organization's services or plans and/or its views on trade and libraries. No standard set of questions was used. A complete list of people interviewed is found in the appendix. Also included in the appendix are the names of persons with whom I had correspondance but did not interview.

The librarians interviewed were chosen by institutional affiliation and represent no scientific sampling of opinion. Because of my own experience and the initial discussions with the association program officers, Bookseller Association representative, and faculty, I concluded that a statistical sample and questionnaire would not necessarily reveal a full or true view of the thinking in this area. In addition the plans for two related surveys to be done during the year would have lessened the change of appropriate and full response.

Libraries with automated systems for book ordering with plans to upgrade their systems into interactive ones were identified from the Directory of operational computer applications in the United Kingdom libraries and information units (Aslib, 1977), VINE, Program, the membership of the cooperatives, and from the

personal recommendations I had received. There was not a predetermined number of interviews, and names were added as additional information was gained throughout the year. Librarians interviewed were deputy librarians and heads of bibliographic services of the public libraries, sub librarians for acquisitions and deputy librarians in universities, and librarians of polytechnics, colleges, and special libraries. The number of types of libraries represented in the interviews were: public (9); university (8); polytechnic (2); college (1); special (1). In addition during the course of the year I spoke with other librarians from each of the categories in more informal circumstances. Their comments and opinions were used in forming my conclusions about attitudes and interest in the library/bookseller interface but were not used in the actual preparation of the report.

The high concentration on public and univeristy librarians was the result of the view gained from the literature and the initial interviews that experience with and plans for any extensive automation resides within these groups since they have the most significant expenditures on materials and large numbers of staff handling the book acquisition functions. I do not wish to denigrate efforts and work done on circulation systems in polytechnics and colleges but in telephone conversations and written responses to my initial inquiries, many of the librarians of smaller academic institutions admitted they had not yet thought about automated acquisitions systems to any great extent or in any detail. Therefore, I selected only a minimal number to interview.

From the book trade, library suppliers, general booksellers with a library supply business, and academic booksellers were interviewed. Because public libraries, which have the greatest amount of funds to spend for books in the United Kingdom, purchase most of their books from library suppliers, much of the investigation was devoted to this form of business. Also it is because this sector of the book trade that has already begun to work with public libraries on telecommunication links between their systems.

The current List of Library Booksellers 1979-80 (Booksellers Association, 1979) lists 96 firms. Those included can be thought of as belonging to two groups -- those who are solely in the library supply business and those for which library supply is only a part of or a division of the retail firm. Most of the firms in the current List of college and university booksellers 1979-80 (Booksellers Association, 1979) also supply libraries to some extent, and some firms are listed in both directories. In addition there are sources of library supply that are in neither of these lists, and include the local High Street bookshop and specialist bookshops.

Eleven library suppliers and eight retail booksellers who handled library

supply were selected. The library suppliers can be divided into three groups: six large stockholding library suppliers, all of whom but one, primarily serve the public library market; the middle sized stockholding library supplier who may have a speciality such as juvenile titles or paperbacks; and the small non stockholding library supplier. The first group operates with a high degree of automation and therefore has had much experience from which to draw. The second group also has computing capacity but not the size of the data store or the suite of programs to process as many functions as the larger library suppliers. The third group has not computerized any of the functions, but individual firms may be contemplating some degree of automation.

The retail booksellers interviewed can also be divided into three groups: university campus bookshops; general bookshops in academic towns; and general bookshops in cities. In the last group, several had branches serving academic clientele and libraries. All retail booksellers interviewed were stockholding booksellers. All but two had some degree of automation.

Since the majority of publishers do not have direct business relations with libraries the investigation of publishers was more limited. I concentrated interviews on distribution directors and systems and data processing managers. I relied on Publishers Association committees' members to speak for both their own firms and their colleagues. In addition, representatives of research groups, suppliers of book trade services, and book trade automated systems suppliers contributed information on publishing and bookselling interfaces. These sources were selected from names gathered in a survey of the literature and Booksellers Association and Publishers Association recommendations.

Specific bookselling or publishing firms are mentioned only when it is necessary to distinguish among them when relating publically available information. Information gathered in discussion with booksellers and publishers that is not publically available is not directly attributed to any person or firm. The information has been used to evaluate plans or form opinions on the likelihood of specific developments and the time tables for these developments.

ORGANIZATION

The report is organized into three sections following a list of definitions of terms used in the report and comments on the literature. In each of the three sections I present the information gained from the interviews followed by my observations and discussion of the plans or possibilities or problems contained in the information I had gathered from my interviews. Section One includes libraries' current technological capabilities in acquisitions, librarians' views

and plans, library cooperatives' plans for acquisitions systems, and libraries' requirements that must be satisfied to make library/bookseller interchange of data in electronic form a positive addition to libraries' acquisitions systems. Section Two presents the book trade situation: present levels of automation in library supply; automation in publishing; book trade use of technology in its cooperative efforts to increase efficiency of ordering and fulfillment; and the bookseller response to library requirements for electronic interchange of data. Section Three presents the wider issues surrounding individual bookseller and library decisions and conclusions in the form of forecasts of developments in this area.

TERMINOLOGY

Included here are words and concepts that are used throughout the report with my context and usage given to eliminate any ambiguity of meaning.

Library: Since it is not possible to speak about all libraries' needs and plans, I have limited myself to public, academic, and other special libraries which are of sufficient size to acquire such numbers of books that the paperwork of budget, fund allotment, preparation of orders, and compilation of statistical information is of great enough volume and importance to have staff and equipment devoted specifically to this function. The one room or one person library or one which is composed almost entirely of company and other technical reports is outside my primary focus.

Acquisitions System: For the types of libraries under discussion this includes the preorder verification, fund encumbrance, order preparation, order receipt, invoice clearance, posting of funds expended, and statistical compilation. The book order and purchase transaction is but one part of the whole acquisitions system.

Library cooperative/library network: (British and American terms respectively) The British form is used unless referring specifically to an American situation. The cooperatives and networks share the philosophy and purpose of setting common goals among members, sharing the planning and financing of the bibliographic support systems for cataloging, circulation control, acquisitions, and other services necessary to meet the goals. Membership and governance differ, and where this makes a difference in the subject under discussion, I distinguish between the British and American situations.

Book trade: The term is used collectively for booksellers, library suppliers, wholesalers, and publishers.

Bookseller: Any firm engaged in selling books to the public; collectively, the retail source of supply other than the publisher. The term library bookseller is used to indicate any retail firms that has a library supply business and more than the average sales to libraries than Charter Group surveys indicate as average.

Library supplier: (British term) a firm that specializes in sale of books and other material to libraries and provision of other related services. Some large retail booksellers also have separate library supply divisions of their business.

Library jobber: (American term) a firm which specializes in sale of books and other materials to libraries and provision of related services. These firms do not usually have retail operations, but some may also be wholesalers supplying books to retail bookshops and other library jobbers.

Software House: a commercial firm which designs computer software to a customer's specifications.

System supplier/turnkey system vendor: a commercial firm which develops software to run on specific or recommended hardware and sells the complete package to multiple customers. Little customized adaptation of the software to the purchaser is generally possible. Currently, these vendors supply systems to publishers, booksellers, and libraries in Britain and America.

Electronic communication: Two way transmission of digital data by means of telephone lines rather than printed paper and post.

Telecommunications: In a generic sense, includes any transmissions by electronic or wireless communication. It includes dial up, packet switched, or direct telephone line transmission of data in digital form.

Interface: In the technical sense, a connection of two foreign computer systems which may require code, format, speed or other changes.

Online: Direct access from a terminal to a computer's central processing unit which enables immediate processing of input.

Intelligent terminal: one which includes a microprocessor and thereby can be programmed to perform simple tasks independently of the large computer to which it is connected.

COMMENTS ON THE LITERATURE

Since the report looks into the future, little published literature exists that offers direct discussion of the area under investigation although forecasts and hints of such developments have been made since the sixties.[1,2,3,4] The retrospective literature on library automation efforts, publishing and bookselling provides an insight into the workings of the British libraries and book trade and the attitudes and conditions that exist and into which new ideas and procedures will have to blend. I read and scanned the standard works on the book trade in order to gain a better understanding of the British scene.[5,6,7,8,9,10] I also reviewed basic British texts on public, academic, and special librarianship.[11,12,13,14,15] A valuable guide to this reading and a good introduction to British libraries was the College of Librarianship Wales' study guide for its Post Graduate One Course.[16]

Very little analytical writing has been done on the business aspects of book publishing and bookselling, and both groups decry the lack of information on markets and performance.[17] The Booksellers Association publishes a survey of Charter Group performance on an annual basis, and the Publishers Association produces limited statistical information quarterly and annually.[18,19,20] An account of the dichotomy in image and business practice of British publishers has been written by a sociologist.[21] An economist's recent work on UK publishing is one of few works to deal with libraries as markets for publishers' products, but it barely mentions the implications of the new technology on publishers' operations.[22] Recently, the Booksellers Association and the Book Marketing Council have produced studies on book readers and book buyers and lost book sales.[23,24]

In contrast, the American book industry has a collective approach to research in industrywide concerns in the Book Industry Study Group. BISG has been publishing research reports since 1976 and compiling statistical and analytical information for planning purposes.[25] Most of the recent books on American publishing have dealt with the effects of corporate finance and mergers but have not discussed new technologies as they relate to business operations.[26,27,28]

The most relevant information found is in the current trade literature, Bookseller, Publishing News, Publishers Weekly, in short pieces and reports of meetings, conferences, and speeches, and articles on current economic conditions, specific firm's plans, or problems facing the industry. One must piece together patterns and judge the broader implications from these reports of current activities.

Any discussion of the new technologies and their use by the trade in their business with each other and libraries will be found in these journalistic sources

and the few published proceedings of meetings. British examples include a publisher's outlook for publishing in the information age and the discussions of Teleordering and machine readable codes.[29,30,31] American examples include Doebler on long range developments in distribtion and Paul on book industry standards.[32,33] The report Waiting for Bookland forecasts the implications of machine readable codes on books for the book trade and libraries.[34] The work of the Primary Communications Research Centre includes examination of technological developments useful to publishers, and Knowledge Industry Publications has announced a series of books directed toward publishers including developments of bookseller and library order systems.

The library literature on automated book acquisitions systems is much more abundant, but much of it is mechanistic and specific in description of operating systems. Heyman and Abbott prepared a bibliography for the 1979 Library and Information Technology Association conference on automated acquisitions.[35] Sources that up date this bibliography and that relate to the book trade interface are included in this report's bibliography, but no attempt has been made to include all articles on the general subject of automating acquisitions. For current status and continuing efforts in Britain, the reader is referred to VINE and Program. The emergence of the journal Library Acquisitions: Practice and Theory has created a forum for discussion of current issues and common concerns including the future of library acquisitions systems. Specific discussion of library/bookseller aspect of automated systems occurs primarily in American sources. The Boss survey of online acquisitions systems available in the United States includes a section on bookseller systems.[36] Questions about two turnkey systems that are planned to be able to link to booksellers are answered by designers in published interviews.[37,38] One library jobber's queries about the future of that business in the electronic environment is also published.[39]

Both British and American librarians have set up informal forums for discussion of mutual areas of interest such as codes of practice for purchasing and servicing books. In Britain, LIBTRAD has held several conferences through the years and has published its proceedings.[40,41,42,43] In America, the Library Book Dealers Discussion Group within the Resources and Technical Services Division of the American Library Association has had its activities covered regularly in Library Resources and Technical Services, RTSD Newsletter, and Library Acquisitions: Practice and Theory.

Recently, interest on both sides of the Atlantic has turned toward how the library and bookseller may benefit from electronic data transfer. The 1980 ALA Preconference on Library Acquisitions in the Eighties devoted several sessions to these interactions.[44] Likewise, at the 1980 Library Association annual meeting

there were discussions of the future shape of library and bookseller interactions.[45] Special interest organizations and regional library groups in both countries have taken up specific aspects of this area.[46,47,48,49]

As libraries will never be a major force (i.e. large enough market) for the creation of a specific telecommunications mode designed for their particular needs, librarians will have to evaluate and choose among the existing and developing technologies. Telecommunications and their role in information transfer within the library context has been explored by several writers.[50] Lancaster has written extensively on the paperless library.[51,52,53] More cautious views can be found both in general social and British context.[54,55] However, none of these sources deal specifically with the use of telecommunications in the book acquisition function.

Commercial ventures in each country have been established as a direct result of internal automation of the booksellers. The literature on these systems is mostly promotional or descriptive although two use studies do exist.[56,57] Most published material in this area can be considered background, thereby necessitating the interview approach to developments in this area. Little analysis has been done because most systems are in varying stages of development by both libraries and booksellers. Unpublished planning documents, implementation memos, system specifications, and publicity material form the bulk of the printed material directly on the library/bookseller interface and are cited where relevant.

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SECTION 1: LIBRARIES AND BOOKSELLER SYSTEMS

AUTOMATION OF THE ACQUISITIONS FUNCTIONS

Requisite background to the specific aspect of library acquisitions under study is a view of the developments to date in automating the book purchasing function. Two bibliographies have been published that are quite comprehensive surveys of the literature in this area. Of historic interest is Wynar's bibliography of 1960's attempts at mechanized systems.[1] These batch systems printed out orders and were the prototypes for most automated acquisitions systems in operation today. The entries in the 1979 Heyman and Abbott bibliography reveal an increase in the number of librarians seeking to inform their colleagues about innovative solutions, an awareness of the role of minicomputers and microcomputers for local library use in these systems, and the importance of integration of the functions into other library systems.[2] The conceptual designs for future systems and several operational systems described rely on online manipulation of data and emphasize the need to dispense with multiple paper and machine readable files.

Boss summarizes the reasons why more libraries are planning to automate their acquisitions procedures.

> Acquisitions consumes a large part of every library's budget and the pressures to account for expenditures are greater than ever. Thousands of libraries have now had some experience with automation --shared cataloging, on-line circulation, or the searching of remote bibliographic data bases -- and are prepared to consider the automation of other library functions. The computer hardware now available to libraries is capable of supporting the integration of several related functions. The bibliographic utilities and turnkey circulation system vendors have substantially completed the development of software for their initial products and are seeking to broaden their range of services. Book vendors with in-house computer systems see significant financial benefits to having libraries submit orders on-line.[3]

Because the technology available to libraries makes it possible to consider integrating all library systems, discussion of automating of acquisitions procedures cannot be discussed by librarians without its relation to other parts of the library system. Some of the most comprehensive integrated systems planning in North America and Britain is being done by the cooperatives and networks. BLCMP, SCOLCAP, and SWALCAP in Britain, and OCLC, RILN, UTLAS and WLN in North America all have multiple systems operational or under development. Individual libraries such as University of Loughborough and the University of Sussex are developing their own integrated systems. Northwestern University is one of the most outstanding American examples of integrated systems design. Another approach is the use of systems developed by commercial firms that provide for circulation, catalog, and acquisitions control.

Booksellers' databases have also been incorporated into the design of some systems. In Britain, the Essex County Library has integrated searching and ordering from Blackwell's database into its catlog system by transfer of records from the bookseller into its mainframe computer. In America, the Baker and Taylor acquisitions services include the option of machine readable order records and/or MARC cataloging for a library to use on its own computing equipment. Each bookseller has approached its systems offerings differently but in each situation to date the library supplies the programs and equipment to manipulate the catalog data.

No comprehensive or systematic overview of automation in libraries exists. For British libraries there is the commendable attempt compiled by Wilson in 1977 which now unfortunately is out of date.[4] The task of determining which libraries have automated acquisitions procedures and the method of their approach is somewhat reduced by the existance of this sourcebook, but librarians and booksellers interested in a comparative and state of the art view must use a combination of Wilson, VINE and personal contact to keep current with developments.

From such an approach I have identified five "levels" of automation in acquisitions procedures that currently exist in British libraries.

Level 1. Some libraries have enhanced their manual systems with automated fund accounting programs run in batches on a local computer. Contrary to the American experience, most libraries which have access to online book information files via a cooperative or an information retrieval data base do not use them for preorder verification.

Level 2. These are batch systems of order generation, fed by punched tape or punched cards, which may or may not incorporate accounting functions. They are usually updated by specific receipt or cancellation transactions.

Level 3. These are batch systems or order production linked to catalog production systems. They include updating of central files while orders are outstanding; provision for order records to be upgrade into catalog records and deleted as part of the catalog program; and provision of financial and other statistical information.

Level 4. These are online systems in which orders are matched against a catloging database as entered online to the database. In the case of libraries which plan to use a cooperative's acquisitions and ordering module, the database will be external to the library. Orders are printed on demand or in batch mode. Outstanding orders can be amended online. These systems supply fund accounting and order related statistics.

Level 5. As in level four, the libraries are online in their internal procedures but are also able to connect directly to external databases for data exchange via telecommunications.

As the levels procede from one to five, the number in operation drops, but the existance of the latter stages can be seen as an evolutionary revision toward in capability of the technology and broadening of the scope of the systems design. Not all libraries at the later stages have evolved from level one to level three or four. Some later entrants have designed their first systems at the higher level. As greater expertise exists and improved packages of software become available, so more libraries may be able to enter at a higher level, going directly from manual to an online system.

Bookseller Interfaces

It is at stages four and five that interfaces with booksellers' systems already exist in varying forms. Although the present advertised capabilities of several library suppliers make it possible for any library to dial into a bookselller system for a one way transmission of data, it is only at levels four and five that the interactive aspects of telecommunication links with booksellers can use the full capabilities of technology and the content of bookseller databases for the benefit of the library.

A review of British and American efforts at incorporating bookseller databases and software into acquisitions systems is appropriate here as these operational, experimental, and promotional situations will shape the thinking of many librarians as they approach this aspect of their systems design.

Britain

Three library suppliers currently offer dial up access to their databases for bibliographical verification, availabiltiy for purchase, ordering transmission or other uses a library may wish to make of the file. An example of this may be replacing stock in a subject area by using the different systems' varying capabilities for searching by subject or classification numbers. All three library suppliers, and other library suppliers considering or planning the same access to their databases, welcome inquiries and discussions with customers about other uses and other modes of access to the bookseller's file including direct computer to computer transaction. No great marketing initiatives have been made so far, but the three firms now have printed promotional material.

Two libraries are currently placing orders directly into two different bookseller's systems using the bookseller's database.* In one of the libraries there is a direct link between the bookseller and library system so that orders

* At the time of writing, only two libraries were known to the author.

are placed and records are captured and held by the library and used in its order file and catalog production. The other library has a dial up connection for title identification and order transmission with all other work reverting to its traditional paper form. A revision of the current ordering system is being designed to incorporate the use of booksellers' databases. Other libraries have had similar but limited and experimental situations, and several other libraries are currently experimenting with the use of bookseller databases within their own context but without ordering facility.

Both of the cooperatives with acquisitions modules under development have not made plans for electronic interfaces with booksellers. However, discussions with members of the cooperatives indicate pressure will come from them so that the cooperatives' system designers will explore these interfaces.

No software package is available for a library to purchase and run on its equipment that would make it possible to transfer information to its system from the bookseller and include fund accounting and related functions. Each library must, at present, develop its own interface and programs. One bookseller is developing such software in conjunction with a periodicals system.[5] Another library supplier is interested in developing book order software for use on a library's microcomputer and is looking into the market for this software. Other library suppliers will probably follow suit when librarians show interest in the other two firms' software.

The library profession has had limited exposure to the concepts involved, and few public debates have taken place. The Hertfordshire Seminar on Automated Book Ordering[6] and the MARC Users Group Working Party[7] were too narrowly drawn in membership to give booksellers wide and clear views of what libraries will want or what booksellers will be able to offer.

North America

The two largest library jobbers market total acquisitions packages which include equipment software for fund accounting and statistical reports, online access to their databases, and online ordering. Each bookseller has several public and academic library customers. The third large library jobber does not have online ordering but accepts order entry into its system by diskette and offers a limited fund accounting module. Two other library booksellers are able to receive orders electronically from libraries who install a turnkey acquisitions system which itself is an outgrowth of those two bookselling firms' internal order processing systems. As soon as book trade protocols are standardized, the vendor of the turnkey acquisitions system will supply the software to transmit library orders via telecommunications links to all booksellers who use

book trade standards in their systems.[8] Several large libraries are receiving bibliographic and invoicing information from their suppliers in machine readable form but not online. Several circulation system vendors are adding acquisitions modules, only one of which is at the installation/test stage. This firm may also market the acquisitions software separately at a later date. The present plans include generating orders on paper and on magnetic tape.[9]

One library network has announced its intention to transmit orders electronically but has now delayed implementation at least six months and realistically well into 1982.[10] One other has under consideration a telecommunication based but not online mode of transmission of orders.[11] The Canadian network has several libraries experimenting with orders through electronic mail. In this case the bookseller uses a network terminal.[12]

There have been several national level meetings since 1978 on the subject of automated acquisitions and regional meetings as well. However, the area of interfacing systems with booksellers has not been thoroughly discussed since the two commercial systems now available do not offer direct links to library computers and the smaller, non stockholding jobbers have not announced any plans in this direction, other than their intent to react to the competition and work with the networks in order to receive electronically transmitted orders (and to save themselves systems design costs).[13]

BRITISH LIBRARIANS' VIEWS

The current state of technology in libraries, the high cost of designing and implementing new computer based systems, and general cautiousness in approach by British linrarians form the background in which any new system will be developed. Therefore, a great deal more thinking, discussion, and planning will have to be done before it can be determined which way a library should procede in developing a system which incorporates bookseller services or if it should procede in this direction at all. The interviews conducted with public, academic, and special librarians were an attempt to elucidate the thinking of British librarians about the use of computers in the acquisitions process, the potential benefits or problems in use of booksellers' databases, and the librarians' long term plans for their book acquisitions systems. From the specific plans and the opinions of librarians I have drawn together a general overview which can only be truly representative of the individuals to whom I spoke, but it is hoped that it can indicate the direction of the planning and thinking in the public and academic library sectors. What follows is a synthesis of answers and discussions of my guide questions. The librarians views are grouped by topic and are followed by my observations on their comments.

Current use of computers in ordering and cataloging

All county libraries interviewed used the local authority mainframe computer in a batch mode to produce orders, chasers, lists of new acquisitions, and summary order activity statistics. In some systems, there were automatic checks of the catalog by ISBN to prevent duplicate orders, and order records were upgraded to catalog records by matching against MARC tapes. One city public library was a member of a cooperative and the other used LOCAS. For both there was no automatic linking of the order records with the catalog. The libraries all had COM catalogs using small percentage of the total MARC fields. In two systems there were online links with booksellers, one functioning in an integrated mode and the other in a dial up mode. All but two others had discussed integration of their system with booksellers.

All the academic libraries had manual acquisitions systems for generation and maintenance of open order files. Some were in the process of computerizing fund accounting modules. One specific library had a manual system and the other a batch mode running on the governmental unit's mainframe. Seven of the thirteen academic libraries were members of cooperatives; two used LOCAS.

Plans for acquisitions systems

The public librarians responses may be split into two groups: those that

plan or visualize the day when they will be able to have a minicomputer for the library applications which need to be interactive with a bibliographic file processed on the county mainframe; and those that plan to stay with the county mainframe in its batch mode, using a microprocessor to handle current orders before passing the records into the main frame. The former group envisage an integrated system of acquisitions, cataloging, and circulation with some software supplied by an outside contractor since the county staff is not large enough to handle all the library applications programming. The acquisitions and circulation files would be linked on the local minicomputer so that reserves could be made on new orders. Libraries with their own minicomputers would then have the facility to link directly with a bookseller's computer. The Essex County Library operates such a system, but no other specific plans exist among these libraries. The latter group see the receipt of machine readable records from booksellers on tape or disc as the extent of interface and do not see the need for the immediacy of telecommunication, but agree that if it were "cheap enough" it would be attractive.

Most librarians are skeptical about plans for external links to the county computer especially if the local authority will have to supply the software. Some would welcome acquisitions systems software packages available for purchase, lease or sharing from software houses, booksellers or other libraries to run on microprocessors which would allow the libraries with more limited resources for computing to share in direct communication with booksellers.

Most of the academic libraries'plans go as far as the cooperatives to which they belong although most have misgivings about the total acceptability and usefulness of the cooperatives'plans for the acquisitions systems. Several thought they should not use the acquisition module unless it incorporated book purchasing features. One univeristy library, not a member of a cooperative, has in its plans the use of a bookseller's records in its order system, but at present, neither the library's ordering module nor its prime bookseller is able to support these plans. Another university library considering cooperative membership for cataloging would prefer to receive order records from a number of booksellers and not use the cooperative's acquisitions and ordering module. University librarians on the whole are concerned that their academic booksellers are not in a position to receive orders or return machine readable records to them and thereby seem to be satisfied with the cooperatives' plans as far as order generation is concerned. Those who use booksellers with machine based databases are anxious to work out some kind of a situation where they can have the best of both.

Cost data on acquisitions functions

Few had done cost studies of acquisitions processes and order functions for planning purposes. All felt that they had an intuitive knowledge of where the high costs were and where potential savings could be made with automation. Several likened costing acquisitions to the process of costing cataloging systems. Work would be done once the cooperative systems were installed or about to be so that a budget could be set up for the cooperative membership and other expenses. The public libraries who had done some costing were either those who had put out specifications for tendering or those whose county administration conducted the study for administrative and personnel reasons. In the first case there was a much more positive feeling about the accuracy and usefulness of the figures.

Effectiveness of current systems

Most librarians felt that their systems operated efficiently without insoluble problems. Those public librarians who were working toward minicomputer/mainframe systems were looking forward to the elimination of multiple key punch operations, editing and updating online, and reduction in the size and number of files and printouts. Few academic librarians were concerned with backlogs or multiple files or paper intensity as it seemed to be a way of life. Fund accounting in the university libraries was considered a chore right for computerization.

Only in institutions where staff had been cut and further cuts were threatened did there seem to be specific pressing need to reduce the amount of filing, typing and keypunching. In general, most librarians assumed staff savings would be the improvement automation would offer. Speed of order placement or supply did not present a problem as most libraries stepped out of regular procedures for rush orders. There was concern that patron requests not in stock at the bookseller were taking longer to supply, and the blame lay with the publishers and not the bookseller.

Because of the lack of cost data, it was difficult to receive information on the cost/benefit that would be derived from an automated system or that must be derived from any change to the present systems. Generally, a forest/trees situation exists. Deputy librarians and Librarians had a system view and quite often ranked acquisitions problems low in their priority for change but saw ultimate solutions whereas, predictably many technical services and acquisitions librarians saw all the immediate problems or barriers to change. There were several outstanding exceptions, and it is hoped that their ideas will be incorporated into the total systems planning at their institutions.

Library supplier selection and services

Generally, public libraries used at least four major public library suppliers and some local booksellers. These library suppliers received 80% or more of the libraries' orders. Low cost processing with highly customized requirements was important in choice of supplier. Most public librarians did rely heavily on the services and did not see that the charges should be any higher than at present. The librarians felt that a large expenditure to each library supplier kept the library suppliers willing to give added services. Little formal comparative evaluation among suppliers on speed, accuracy, or fulfillment rates was done. Each library supplier was selected for an area of expertise or specialization, e.g. children's books or approval plans, and then was given a "set" percentage of the library budget.

Academic librarians usually ordered books locally and also from specialist booksellers. They seemed to accept the efficiency or inefficiency of the local supplier as their fate. Academic librarians asked little of library suppliers and booksellers other than the supply of the books ordered. Most had worked out an approval copy plan with their prime source of supply. The smaller the academic library, the more likely there was some servicing done by the bookseller.

Both academic and public librarians thought that if libraries were to use machine readable records supplied by booksellers, any charge for the records should be minimal. More important to both groups were the quality and format of the records which would have to be merged into the library's system.

Bookseller Systems

All librarians were highly skeptical about accepting a total package from a bookseller such as those offered by Baker and Taylor and Brodart in the United States or the Blackwells/Essex County model in Britain. The librarians did not wish to be or feel tied to one bookseller. Because of its present association with a public library, the Bookline system did not generate interest from most academic librarians. However, in a more theoretical discussion without the names of a system or bookseller attached, it was evident that the concept behind Bookline was desireable: a large database of current availability information; compatible formats of records; online transfer of orders to the bookseller; and transfer of records to the local library for internal processing. Public librarians were interested in the Bookline concept but seemed to prefer access to a number of bookseller databases with transmission or order information in both directions. They felt that competition and standards would bring about highly competitive and highly compatible systems of access and transfer of records.

Most librarians were unaware of the details of Teleordering and had the view

that it was dying or already dead. Those with computerized acquisitions could see the technical feasibility of libraries participating directly, but physical processing, the 10% discount, and free delivery would continue to make ordering via booksellers preferable. They thought Teleordering should benefit them indirectly by increased sophistication of the bookseller in transactions with publishers.

Acquisitions database

There was little agreement on an appropriate ordering database. Members of cooperatives agreed that MARC files were good but not sufficient. A combination of British Books in Print and MARC files was thought to be ideal, but they did not have ideas of where this would be mounted, accessed or funded. Most felt booksellers with large stocks of new material would provide information useful in ordering that the cooperatives databases could not supply. Most thought that if they were ever to be able to use a bookseller's record, it should be in the MARC format so that the library might add information and manipulate the records on the MARC formatted database. Public librarians saw the possibility of the system polling booksellers' databases by computer placement of orders where there were matches. They agreed that it was not worth staff time to shop among databases on a regular basis. Academic librarians wanted to be able to use the systems integration of the cooperatives with the accuracy for ordering of the booksellers' databases, but the librarians wanted to use but one set of keystrokes for order entry and record capture. Therefore, they were expecting to have some form of access to the bookseller database through the cooperative or access directly to the bookseller database with the required record going into the cooperative's system from the bookseller.

It is my observation that, overall, there has been little detailed thought in the area of library/bookseller interface. There were few concrete plans with specific details, but that is to be expected where new uses of technology are evolving. As much as possible, I tried not to lead the discussion but to use the questions to provoke discussion. I found that most of the technically informed and reasoned discussion came from those who had extensive experience in planning systems and were working with systems based on the library's own resources of systems analysts, programmers, and the county or university computing facilities and staff.

There were few academic librarians who had looked into this area, understandably, since many had not yet reached level one of automated acquisitions. Dominating all the discussions with academics were the gloomy financial futures of the institutions. The librarians see innovation in computer systems as too

costly to contemplate except on a cooperative basis. This presents a problem for this cooperative based approach: many of the representatives of the membership are not experienced in computer applications in acquisitions. That, combined with the cooperatives' staff who have limited acquisitions systems experience, indicates why the cooperatives have not anticipated the possibility of interfacing with suppliers.

LIBRARY COOPERATIVES AND BOOKSELLERS SYSTEMS

Because so many libraries have chosen the cooperatives' approach to their systems design and will be incorporating the acquisitions and ordering modules being developed, a review of these systems with implications for bookseller related services is appropriate. There is a substantial literature on the emergence, purpose, and funtion of library cooperatives. The best summary of the current activities, scope of involvement, membership, costs, and plans of the UK cooperatives is Seals's 1980 report.[14] In it he describes four cataloging services in detail with additional information on other cooperatives' activities.

The views of the membership of each cooperative and the activities of several other organizations will create the environment in which the cooperatives compete for membership and contemplate expansion of services in the years ahead. Most important are activities of the Cooperative Automation Group, the British Library, and to a lesser extent, the MARC Users Group. Each in its activities will influence the cooperatives plans as they are currently stated or outlined.

There has been recognition of the fragmentation of efforts as each group of libraries in a cooperative and other libraries individually try to solve the same problems of catalog production. One result is the existance of many similar databases of MARC and Extra Marc Material (EMMA) split into online and offline batches depending on the particular cooperative's system. Access to and use of EMMA varies among the cooperatives. The Cooperative Automation Group (CAG) formed in 1980 with representatives of the British Library, the four cooperatives, Library Association, SCONUL, and COPUL has as its purpose "to ensure the most effective articulation of the services provided by the British Library and the library automation cooperatives and the plans for future development of these services..."[15]

The CAG is considering the possibility of a national database of bibliographic records and has a Standing Committee on Bibliographic Standards and a Working Party on Access to the Data Base. The national database of BNB, LCMARC, and EMMA has great implications for the design of all library cataloging and acquisitions systems especially if book trade information were to be included. Since no concrete proposals or published reports of CAG's activities has been made available, it is not a factor that can be discussed, but this issue is mentioned here, for it comes up in discussions of library planning of catalog systems as the future or as a totally impractical and unrealizable dream.

The British Library's plans are always of interest and concern to British librarians and can influence the development of individual library's data handling through its production of machine readable catalog records, and through the shape

of its PLAISE programs. At one point, an order system was being planned, but this has been withdrawn. In a recent talk to the MARC Users' Group, David Martin, Director of Automated Systems and Computer Services, of the British Library, would only go as far as to say that the British Library would continue its cataloging and biomedical information services and that the cataloging services of record creation, data base storage, and provision of access to the files and catalogs to individual libraries were under review to see how they could be improved but also how they will relate to other British Library programs and the developments of CAC.[16]

The British Library has also funded many research projects, the results of which have worked their way into the main stream of British Library practice. It will continue to be influential in this role.

Another group which is active in the area of library automation is the MARC Users' Group, established as a forum for those who use the data on the exchange tapes directly through the British Library LOCAS service, or through a cooperative. This group includes commercial users of the data as well. The MUG is represented on the Cooperative Automation Group Standing Committee on Bibliographic standards but as an organization has no direct ability to change the policy or procedures of any library, cooperative, or other association. Of direct interest to this study is the group's working party, established in November, 1980 to investigate standards of content and interchange of records for online book ordering systems between libraries and library suppliers. This working party was created as a result of an ad hoc seminar held at the Hertfordshire County Library to discuss the issues involved in such online ordering systems. On the surface the efforts of the working party run counter to the cooperatives' plans but may be attractive to all the public libraries that are not members of cooperatives. Members of the working party admit that this is but a start in the ongoing effort that will be necessary to prepare the way for mutually acceptable developments for librarians and library suppliers.

UK Cooperatives and Bookseller interfaces

Birmingham Libraries Cooperative Mechanization Project (BLCMP) and Scottish Libraries Cooperative Automation Project (SCOLCAP)

Part of the BOSS (BLCMP Online Support Service) system scheduled for 1981 but now delayed is the acquisitions and ordering module. The acquisitions module is a front end to the cataloging system integrated with its catalog production and capable of fund accounting statistical reporting and generation of paper orders to booksellers and publishers. The main emphasis is on searching the BLCMP database both online and offline and using the bibliographic records as sources

of order records to which other library specific order information is input by VDU. The search keys in BOSS have been increased to allow for searching by author and title as well as control numbers on the online portion of the database. All order records will be maintained online for access and manipulation and will be uporaded to full MARC by centrally loading of weekly tapes. Typing of orders is done on the VDU to a minimum MARC standard with less typing necessary when there is a match on the database.

The SCOLCAP acquisitions and ordering module is due to be tested in three libraries in the beginning of 1982. Its file manipulation differs from that of BLCMP in that it uses the SCOLCAP Union Catalog and the LUCAS service rather than the MARC tapes. The acquisitions module differs in the details of search, fund accounting and reports but the emphasis is the same. The order file will be created from the MARC and EMMA and held online. Paper orders will be printed as will management reports.

The considerable areas of acquisitions work not addressed by either system are the necessity of having to continue to search the library's catalog manually as before and the lack of booktrade data available in the database. Thus all the traditional preorder searching will still need to be done to determine availability, price, etc. Despite the ability of several large library suppliers to accept machine readable output, no plans exist at present to generate orders in this format. Nor has there been any provision to receive updates/reports/ in machine readable form from library suppliers in this format. The only savings in time and effort will be fund accounting and possible elimination of paper order files. No significant savings in time or effort will be made by the acquisitions staff in the preorder processes, nor will there be savings in stationery or postage.

OCLC (Europe) Ltd

The existance of this European branch of the American cooperative poses an interesting situation and set of prospects. It is presently alligned with BLCMP in a partnership of sorts in which BLCMP will do marketing, training, and catalog production, and OCLC will supply the database, technical communications work, and magnetic tapes for COM catalog production. No information is available on whether any of the subsystems operational in the U.S. i.e. serials, acquisition, and interlibrary loan, will be available in Britain or how BLCMP members may benefit from the existance and availability of this huge online database. At present, both BLCMP and OCLC are seeking members separately.

North American Networks and Bookseller interfaces

OCLC Inc.

Because North American library networks are operating acquisitions systems

which are still in the design stage in Britain, an overview of these is presented. Because of OCLC's presence in Britain and its potential to influence British systems, discussion of its capabilities and progress is particularly germane. In addition, it has the potential for use by 2,500 libraries in North America and thereby be a significant force in determining the way in which American libraries will develop interactive systems with library booksellers.

OCLC's acquisition system enables member libraries to search the database including the library's own holdings as exist on the OCLC union catalog and generate claims etc., centrally for distribution to booksellers or publishers by OCLC. A systemwide name and address file of booksellers, publishers and libraries is available to all and is updated by all members who add new names which become part of the system for all to use. Through the use of code numbers the names and addresses will be used to sort orders, print mailing envelopes and eventually forward orders electronically to the source specified by the library. Management information is available offline, but fund accounting is available online. There has been no customization of audit trails, but the system will provide at member option paper copies of orders. It is the aim of the system designers to eliminate paper files to the greatest extent possible.

OCLC has participated in discussions with the Book Industry Systems Advisory Committee (BISAC) on format for machine readable orders and has announced its intent to transmit orders electronically to vendors prepared to receive them and eventually plans to involve the bookseller in interactive communication with the network.[17]

Washington Library Network (WLN)

WLN has had an acquisitions system operating for over two years. As with all the other systems described, the online acquisition records are created on the work screens which include the bibliographic information transferred from the catalog files. At present, the orders are printed centrally and mailed to members for forwarding to suppliers, thereby adding days to the order process. Since this is less than satisfactory, they have under discussion a method of placing machine readable orders in separate booksellers files which each vendor could access by telephone line and retrieve his orders. How the orders would enter the bookseller's sytem would depend on vendor requirements and vendor programs and equipment. An alternative consideration is sending order tapes to vendors to use in their systems. The use of separate vendor files is one that has met with booksellers interest for the booksellers would not have to make drastic changes to systems to receive orders.

University of Toronto Library Automation System (UTLAS)

UTLAS has a user group of over 600 libraries in Canada and the U.S. and offers three interrelated systems of catalog support, acquisitions and serials control, and library collection management. The acquisitions system is under development but some parts are being used by a number of libraries. The design includes multiple linked files to provide ordering, receiving, claiming, invoice control, serials checking and renewal. The system can provide orders/claims on tape in MARC format for any bookseller who wishes to receive orders in this manner, but has no takers at present. Two academic libraries are transmitting orders to a bookseller through the electronic mail facility of UTLAS. The bookseller has read only access to the libraries' files and can print out orders and send reports. System Record Numbers are used in the communications between library and bookseller rather than full bibliographic descriptions. Recently, a news release about the Maruzen Company's purchase of the UTLAS software to use in its selling and distribution in Japan stated the attractiveness of the direct machine communication with booksellers and publishers.[18]

Research Libraries Group (RLG)

RLIN, the bibliographic network of the RLG, has an acquisitions system in operation at Stanford University whose system formed the basis of RLIN's approach to database development and searching structures. It has been announced as available to member libraries in late 1981. The RLIN system uses programmable VDUs in the library that are connected to the network's mainframe. Local printers produce orders, and reports. Each library will have its own acquisition processing profile which will allow the designation of frequently used data element values. Record processing will be performed overnight althouth files are available online for data input. Although RLIN has no public information on electronic communication with booksellers, one might assume they will follow with great interest OCLC and ULN approaches to bookseller interface, but move more slowly. One major consideration is the membership of the network, all research libraries. These libraries purchase large quantities of foreign material and serial publications, have blanket orders with publishers and gathering plans with library booksellers at home and abroad, as well as large gifts and exchange programs. They use many booksellers worldwide. All these complicate the relatively simple order and receipt pattern of smaller libraries and may make electronic transmission a less important goal to be pursued after all other bibliographic information is integrated into the system.

Summary

The overall benefits of cooperatives' designs for acquisitions modules are:

integration of record keeping especially if and when library's catalog records are linked to and automatically feed inventory and issue systems; speed of processing materials once received; online access to books on order and in process; fund accounting and order activity statistics. By incorporating all order and post receipt processing information onto a machine held order record, paper files can be virtually eliminated. Other benefits include: inform acquisitions and other library personnel of the existance of an order for a specific title; prevent duplication of orders; alert other libraries in the network of an intent to purchase; share bibliographic information about titles not in the MARC data bases; use of bibliographic record as the basis of an order and eliminate some of the keystrokes in a traditionally typed order.

For systems with complete files online and multiple search keys a library may be able to check its own catalog and do preorder verification at the same time, determining if a book is already in the collection, on order/in process, or if the library has previous editions or other volumes in the series. The system is of value for collection development staff and reference staff as well as those involved on book purchase and cataloging. Depending on staff training and work flow, it is theoretically possible to search the catalog, verify the book in question and order in one sitting and then upon receipt, check in, post the invoice, and catalog also in one sitting. Some systems should eventually provide for receiving of continuation orders, blanket orders, approvals, deposits, and gifts so that manual exceptions to procedures need not be made in processing.

From a strictly book purchasing point of view, the cooperatives' databases lack true book availability information. The data that occurs indicates that a book was or is about to be published. For the latter no expected data is available, nor is the information changed if publication is delayed. No inprint status is given for any of the titles on the database. Publishers may not be the source of purchase, and as such, the catalog record does not indicate source of supply. It does not indicate current prices or separate pricing of sets or whether volumes in a set may be purchased separately. All this information is necessary before an order may be placed. This data, if available at all, comes from book trade sources and it is this aspect of acquisitions work that is not touched by any of these modules. If the cooperatives' databases could add or provide for access to book trade sources, it would prove to be of great value to acquisitions librarians, as would be the ability for the library to order from the booktrade database and have the record added to its order file held in the cooperative's acquisition system.

The linking of the catalog record with the order record from any bookseller is a problem at present because of the variation among bookseller databases and

equipment and because the cooperatives' systems are closed. They were not designed to receive information or access from any sources other than their members on system terminals. There was little general knowledge about booksellers' databases and computing capacity at time when systems designers were applying the ideas of the advisory bodies. Thought must be given by cooperatives' members and by system designers about the benefits of access to library suppliers databases, transfer of bibliographic records, order information, and reports to and from the bookseller and library. In this way acquisitions librarians might have the benefits of the machine held data of the book trade as well as integration of order records within the library's bibliographic system. This very general solution is much more applicable to the British cooperatives and library suppliers because of the smaller number of both involved. It is applicable to those cooperatives with plans for distributed processing for member libraries. A limiting factor in the British scene may be the undercapitalization of the cooperatives and the cost of writing the software for their members that would allow the use of book trade information in the system.

The potential use of the OCLC, WLN, RLIN, BLCMP, and SCOLCAP systems has great implications for shaping future library/bookseller relationships and services for libraries. American library booksellers are concerned that because of the lack of a net book agreement and library licence, libraries could easily bypass booksellers and forward orders directly into the publishers' order entry systems. Libraries in turn would receive a discount from the publisher which would in many cases be higher than that received from the bookseller. The library jobbers are also concerned that the order receipt and pricing information in a library's file when produced in management reports form, may lead to erroneous statistical comparison of library supplier's performance in discount and delivery. The library jobbers are also concerned about access to and charges for use of data supplied to the network databases in the later stages of interactive communications and wish to be compensated for the data. If booksellers balk at cooperation with the networks, the investments of the network and individual libraries may make it impossible for members to use both booksellers services and network systems without duplicate effort.

On the positive side, OCLC has and the other networks will offer electronic transmission to any library supplier who sees this as a desireable method of communication. Also, the presence of network order modules in large numbers of libraries will give the bookseller much needed planning information. If he can assess the number of his customers that are using the acquisitions systems, he will be able to determine whether it is financially worthwhile to establish the links for order receipt. If a reporting mechanism can be

established, this may make cooperation with the networks even more attractive. If the other networks follow the OCLC method for electronic transmission and relations with booksellers, the overall effect may be to terminate the efforts of the booksellers to make their files directly available to their customers, for the system would have to operate outside the network systems.

LIBRARIANS' REQUIREMENTS FOR COMPUTER BASED SERVICES FROM BOOKSELLERS

From my discussion with the librarians and from reading planning documents, I have gathered many opinions, attitudes, and "facts" that indicate that library/bookseller machine based interfaces are (a) of absolute necessity, (b) of potential value, and (c) of little use. Those expressing the first two opinions are in the majority, and it is acknowledged that at the present state of development of both library systems and bookseller systems, many libraries find little attraction to currently available interfaces. But, it is upon these current attempts that future and more generally applicable and available systems will be built. Therefore, I have summarized the librarians' requirements for computer based services from booksellers, using the information I have gained from all the printed and personal sources.

I. Integration with other library systems.

These are seen as imperative.

a. Any transfer of data in machine readable form between libraries and booksellers should integrate with other parts of the bibliographic and financial control systems of the library and its funding body. The same information should not have to be processed twice by the library in order to record information for internal use and again for bookseller use.

b. The bookseller should supply statistics for a library on its order activity on a regular basis and in a standard manner so that the library may use statistics from several booksellers in its own programs for budget analysis and preparation.

c. Libraries using cooperatives' acquisitions modules should also be able to use booksellers' databases without the penalty of duplicate effort.

d. The requirements for interchange of data should not disrupt relations with traditional suppliers and provide for use of specialists and foreign suppliers.

II. Technical requirements.

The following are considered minimum requirements.

a. The connection with bookseller systems must not require a dedicated line or equipment, but this may be used if mutually agreeable to library and bookseller.

b. All booksellers who offer access to and transfer of data to and from their databases should use standardized protocols and search keys so that librarians may use a variety of booksellers' databases.

c. Access to bookseller systems should be made through terminals generally available in libraries.

d. Libraries should be able to place an order directly into a bookseller order entry system to speed supply.

e. The order file should be held by the library and be accessible for modification by the library. Libraries would want access to status of bookseller outstanding orders but require their own machine held record.

f. Booksellers should update order progress and send cancellations through the system.

g. Copy specific inventory information should be available for library use although this may not be an essential part of daily library applications or order placement.

h. Libraries will accept tape and disc records of their orders until computer links are established. Online communication may not be desireable for all aspects of the library/bookseller systems especially while library sytems are not fully online. It is assumed there will be agreement on content and format of their machine readable records. Machine readable invoices will have to be acceptable to the financial authority and may have special requirements.

i. Booksellers should have application programs beyond title search/order/confirm which would be used by libraries on a service or cost basis.

III. Economic considerations

These are of prime concern.

a. Online access is too costly to contemplate for most acquisitions transactions at present. Therefore, machine readable off line transfer is preferrable in the short term.

b. Small libraries see that they may not be able to make sufficient staff savings to cover any large investment in hardware or software.

c. All libraries' investments must be justified in terms of the total systems and specialized acquisitions equipment should be minimal.

d. There is no accepted pricing formula agreed on as to what librarians would be willing to pay for these services.

IV. Measures of Effectiveness

The bookseller interfaces will be seen in terms of financial savings and increased information available.

a. Systems must reduce and ideally eliminate duplicate records, files and key punching and reduce the paper intensiveness of the transactions.

b. Bookseller systems should provide one source for bibliographic information, identification of availability and price with indication of probable delivery time by its stock status.

c. Systems should eliminate errors in transcription.

d. Systems should allow for librarians to make savings on staff.

e. Systems should provide better management data.

f. Systems should speed order entry and delivery.

g. Systems should save on post and stationery.

These requirements in their outline form are not a set of bald demands which must all be met or else development of systems will cease, but are indication of priorities of importance in librarians minds and represent elements in the individual library's equation of what is cost effective, or value for money, or beyond its financial means. The meeting of these requirements by booksellers will not be automatic and swift, but will be gradual and will develop only if librarians think further and act upon some of the issues raised by their requirements. A corresponding list of bookseller capabilities and concerns is found in Section 2 (page 58).

Before these requirements can be met by booksellers, librarians must make some changes in the present procedures and operations. Librarians must cost out all the systems in use and see where savings of time, equipment and personnel would be possible if processes were automated, or upgraded from batch to online or if links to external data files were made. They must be able to recognize a time and/or financial saving in a software vendor or bookseller promotion and be able to view telecommunications charges realistically against any savings made possible and not categorically write them off as too high to contemplate.

They should view the library bookseller role as one with wider scope than at present since many library booksellers have machine records of all the orders

of a library and the records of innumerable other titles. Serious consideration should be given to what the present capabilities are and what specific plans a bookseller has for the future. Although a tradition of good service is commendable, it should be viewed as only one part of the decision why a particular bookseller will be used. There must be a change from historic to future considerations, and choice of bookseller should be made from an enhanced definition of services that are made possible by the computerization of the booktrade and advances in telecommunications. Will the library be able to develop a two way communications system with him? Can he produce machine readable records as an interim step until the library has the capability to receive transmissions back? Is it possible for the library to pay for software development to run on a micro or mini if the library does not have its own programming staff? For librarians philosophically or politically tied to the local bookseller, similar questions should also be asked especially if the bookshop is one of a larger group. Other possibilities for booksellers exist within the developing booktrade systems.

Along with consideration of internal needs, there is a need to work with other librarians on establishing a certain degree of standardization in requirements for content and format of machine readable records and technical interfaces. Certainly, the demand by public library systems for one-off interfaces will be more problematical to library suppliers than their traditional requests for processing, for the financial investments are higher. Independent systems will be part of the scene and no library should be discouraged from developing a system if the money and expertise are available, but the external communications and relations should be subject to a degree of standardization so that collective gains will not be subverted by individual libraries' efforts.

Since all librarians would agree that booksellers supply service as well as books, the onus is on librarians to define the services in this area just as they have done in the past but with greater emphasis on standardization procedures and data. Since most librarians would surely agree that order transmission is not the basis around which a library develops its acquisitions procedures, the ability to dial up a number of library suppliers and key orders via a terminal is not integral to the system and may even be viewed as a technical novelty if that is the only use of that technology. Thus, the one way order transmission systems we see in use today are or should be just the beginning and testing phase to determine problems and areas for expansion.

Librarians must view their systems more broadly than they have done up to now. Just as it is accepted that automated acquisitions planning must be integrated into total system planning, it should be accepted that available technology allows

librarians to change their approaches to some of the procedures. Much of the acquisitions system planning reflects traditional thinking about paper based systems and replicates them on a machine which is capable of producing more paperwork at a faster pace. The available technology allows for a number of processes to be eliminated and other processes combined. Multiple paper files can be eliminated as can the rekeying of information into separate data files for separate processes, If a bookseller's system already stores data necessary to the libraries order file, can it be used by the library to save the library effort and cost? Can access to a bookseller's database and in process information eliminate time consuming claiming and reporting functions? These are examples of the types of questions that should be raised when designing the systems that will operate in interactive modes. In viewing the acquisitions systems for the future, librarians should also consider the eventuality of electronic mail systems, electronic invoicing and funds transfer and anticipate the effect of electronic publishing on the library's organization, services and book budget. Libraries are too small a market to have special telecommunications modes developed for them. Librarians should educate themselves on developments surrounding them and anticipate these in their planning to define new services that are possible with the new technology. Change of manual systems took place by reaction to cuts in staff, by installation of equipment with unanticipated uses, and by new user requirements. Now change will be assisted by outside systems and telecommunications.

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SECTION 2: AUTOMATION IN THE BOOK TRADE

LIBRARY SUPPLIERS

How a library supplier approaches the organization of his business varies in emphasis, but many activities are quite similar because of the nature of the business:receiving many pieces of paper; sending many pieces of paper to publishers and libraries; receiving books and matching them with orders; invoicing; preparing books to customer specifications; despatching the books to the customer. Other activities include: anticipating customer orders and interests; maintaining levels of stock; analyzing sales and costs; and producing catalogs, bibliographies, and booklists. While the design of the system, the choice of titles for stock, the relations with customers and publishers, and market analyses and planning require creative effort on the part of the bookseller, most of the work of processing orders is repetitive and requires multiple files and retyping of the same information for the different files. It was the size of these routine operations in some firms that encouraged the early attempts at automation of such repetitive processes. Now with functioning systems as models and lower costs of equipment, automation is common among British library suppliers.

All library suppliers' reasons for automating internal book order control systems were expressed to me in positive terms and most enthusiastically echo the words of an industry leader, Tom Woolston, whose efforts data back to the early 1970s. Automation increases internal efficiency by eliminating duplicate efforts and repetitive jobs. It increases expansion of business and turnover without proportional increase of staff. And, it provides new and better service to customers. Specifically, book control systems establish one basic record for each title handled to eliminate typing of orders, picking lists, chasers, catalogs and updates, and special lists. All these can be produced from one record when the appropriate software is in place. The one record concept provides flexibility and instant access to data by all persons involved in the procedures from multiple stations including customer service personnel.

The systems of the large library suppliers are considered models for future changes or design of the systems of the middle and small sized groups. Some managers who are upgrading present systems stated as their objective the attainment of the current capabilities of the larger firms. For those small library suppliers contemplating automation for the first time, the advice of some of the large firms' personnel was considered valuable. One large firm is interested in sharing its system by selling the system design and programs. The middle and small sized firms respect the efficiency and economies of scale possible while looking for the "right" capacity equipment and appropriate programs to fit their volume and type of business.

Since it is not my purpose to compare capabilities among the groups or among the specific firms but to identify a state of the art and industry trends, I shall give a summary of the use of computers in daily operations of the library suppliers. This description is based on site visits and discussions with data processing managers and/or general managers of the firms. All library supplier systems, both manual or automated, are designed to perform the same functions of maintaining order and accounting records, assisting in the physical processing of books, and providing bibliographical services. The functions are listed below. Items designated (*) have been automated or use a product of the automated system by at least one bookseller interviewed.

Order Records:	(*) books on order; (*) customers' orders for books from stock and special orders; (*) general stock titles and status of these titles; (*) advanced book information on titles not yet published; (*) customer orders for books not yet published; (*) standing orders.
Related files:	(*) customer names, addresses, account numbers, billing and processing instructions; (*) publishers names, addresses, account numbers, ISBN prefixes, minimum order quantities, terms of trade.
Accounts:	(*) publisher; (*) customer; (*) other suppliers; (*) sales analyses.
Typing/Printing:	(*) orders; (*) chasers; (*) reports; (*) cancellations to publishers and customers; (*) picking lists; (*) invoices; (*) address labels; (*) book labels; (*) issue system labels.
Receiving Books:	(*) Posting receipts to orders; distribution to stock or customer order; processing returns from customers.
Picking from Stock	
Servicing:	Jackets, pockets, stamping; catalog cards.
Packing and Delivery	
Stock Levels:	(*) inventory control lists; minimum stock quantity analyses.
Bibliographic Services:	(*) supply of advanced book information; (*) catalog booklists; show rooms; rush service; (*) statistics on library's purchases; (*) special billing; (*) special bibliographies; problem solving.

The information contained in the order records listed above forms the key to the library suppliers' databases. Each firm stores the titles it handles as general stock, special orders, advanced information on new titles or new editions, and titles reported out of print. The length of time for which a library supplier keeps a completed special order or out of print title on the file varies in system design and use of the database. Therefore, the size and content of the library suppliers' databases vary considerably. For example, Blackwells and Woolstons and Blunts have very large databases drawn from stock, special orders, Whitaker's tapes, and British National Bibliography tapes. Other library suppliers databases

are almost exclusively stock files and special orders.

After a certain amount of manual editing of orders including checking of account status (also on a database in many instances), interpreting handwritten orders, and sorting out potential problems, the orders are entered into the system on a title by title, customer by customer basis at multiple VDU stations. Some systems accept customer title and such specific information such as accession number, Plessey number, or classification number to be used in the physical processing of the book. For titles not on the database, a VDU screen workform is filled in with bibliographic and customer information for printing an order to a publisher. For booksellers without automatic access to BBIP via their own file or Teleordering, the order generally will be sent to the publisher without any other attempt at verification.

The databases hold information of items on the stock file: numbers of copies on order; reservations on copies; and status of items from publisher reports. This information is used when entering an order so that reserves may be placed on outstanding orders, and reports or cancellations of orders may be made for titles not immediately available. The files of outstanding orders are usually read automatically at set intervals to send chasers if no report or book has been sent. For unpublished materials, the systems hold orders until appropriate times for release as orders to the publishers. The picking lists generated for the stockrooms all vary with the internal organization. No company has yet established a title/quantity specific inventory system. For the firms with databases larger than their general stockable inventories the stock items are flagged so that picking lists or orders to the publisher are printed automatically. Orders are printed daily or on other cycles. In most firms they are sorted and addressed by computer. One bookseller has a direct computer link with Teleordering in which orders for publishers with direct computer links with Teleordering are flagged on the publisher file so that the orders for these publishers are directed into the Teleordering system by the computer.

The other files maintained by the library suppliers systems are customer and publisher files. The customer account numbers, addresses for shipping and billing and invoice preparation instruction are kept and called up as necessary during the processing stages and are used to generate invoices in standard or special formats. The publishers file contains addresses, distribution information, ISBN prefix terms, minimum order quantities, and remittance instructions.

Other types of information entered into and maintained by the system fall into categories of finance, accounts status, management reports, and stock reordering information. The systems are also capable of producing special book lists by Dewey class number or subject codes and the annual or semi annual catalogs. One

library supplier will also supply all or parts of his database on magnetic tape or in microfiche.

None of these booksellers has an inventory control system linked to the database so that a title removed from the shelf will automatically be indicated on the database or be reordered. Such systems are viewed as having much potential but with high cost and unclear cost effectiveness with the requisite technology presently available. It is possible to have an inventory ticket inserted in each copy of each book which is removed when the book is sold and this information keyed into the system, but this is a highly paper intensive operation and requires much keying. Other types of stock control documents are produced by the systems and stock is managed through these in most systems. Light pens can be used to eliminate the keying but coded labels would have to be inserted in the books, and this too is similarly questioned in its cost effectiveness. When publishers have bar coded ISBNs in their books, library suppliers will move toward the use of light wands, but they feel the "universal" application is several years away. The light wands will be used first as alternatives to keying in orders, receipts, and tracking approval shipments, and then enter into their stock control systems.

Service to Customers

Most library suppliers underplay their use of technology and stress personal service and bookselling skills in order to keep their traditional bookish image with librarians who library suppliers see as viewing commercial aspects negatively. Internal computerization, sales analyses, marketing information and profitability assessments are not generally grounds for discussion with or of interest to their customers. Indeed, when librarians were queried about the effect of the degree of automation of the library supplier on their choice of a supplier, most said there was little effect but stressed the value to them of speed of supply, accuracy, and customized services. However, many library suppliers would consider these criteria best met by a high degree of computerization. Confusing this perception further are the results of a 1979 survey of librarians and booksellers in which unautomated library suppliers felt that librarians discriminated against them in their choice of supplier.[2]

The most common service is that of the physical preparation of the book which has acquired the name "servicing". It can include jackets, property stamping, classification number labels, accession numbers, and catalog cards. Some library suppliers have acquired the equipment to produce bar coded labels for issue systems. Librarians have been able to eliminate or redeploy great numbers of staff country-wide by purchasing these services from the booksellers at a minimal charge. The price of the service has been kept minimal by the competition among the library suppliers and many members of the trade are alarmed and concerned that selling

servicing at below materials cost is a violation of the Net Book Agreement. A report on library servicing concluded that most library suppliers charge below cost, taking costs from trade margins. This limits choice of suppliers if librarians insist on seeking the lowest costs.[3] As this is an area of great concern to booksellers and public librarians, the discussion is continual and there is currently a Library Association and Booksellers Association working party on a more standardized approach to public library servicing.

The physical processing of books for customers has set a precedent for the extent to which library suppliers will compete, but also a precedent in which the cost for the supplier is out of tune to the service provided. Booksellers fear that librarians will expect the same level of price competition for computer based services. The library suppliers, however, are not sure if this type of pricing will be applicable to this area of service. Hence, most are cautious in approaching these services or discussing price or cost until more specific details are worked out with libraries.

Almost all of the bibliographical services produced are sales tools: new book lists, subject lists, approval shipments, catalogs. They are geared for use in the selection and order preparation for the libraries and sources of orders for the booksellers. Show rooms for off-the-shelf purchase are used primarily by public and school librarians, but all librarians are welcomed to use them or visit their booksellers and pick from stock. Special services include help in solution of difficult title verification, provision of statistics for budgetary analysis, rush service, special deliveries, special invoicing, accepting returns for books ordered in error, and weekly delivery to multiple locations. Some booksellers also offer special library bindings at little or no extra cost.

The computer generated or computer based services are the ones with the most potential for mutually beneficial operations, the most financial risk in development, and the source of most excitement in the library and bookseller relationship. It has long been recognized by one British library supplier, Blackwells, that the computer is just another extension of their traditional services to libraries. North American libraries are familiar with their highly customer specific services which include: approval shipments geared to particular subjects, levels, formats, and publishers; approval books linked to standing orders to eliminate receipt of duplicates; book notices by interest profiles of subject, level, publisher, and format; and the New English Book Service weekly list of books supplied on approval and standing order; books in related fields recently published but not shipped, and a microfiche index to all this data. Available on demand are statistics of the numbers of books sent, purchased, returned by subject and cost. All this is useful to librarians who do not have the staff or programs to obtain

this information easily. For some libraries with their own computer access and programs for statistical analyses, Blackwells provides machine readable records for British books they supply. At least one American and one German library supplier provide this type of service, and others are developing similar services or selected aspects of these services.

In Britain, these services are not used. The approval plans are run on a different concept, especially for public libraries needing multiple copies, and most British libraries are not yet prepared to accept machine readable records from outside their systems. However, three of the major library suppliers are exploring with their customers, the nature, content, format, and use of machine readable order records. Herein lies the next area of major service competition among library suppliers. Those library suppliers that have begun to work with librarians feel that librarians tend to be desirous of costly customization of the computer to computer access and format of records. All library suppliers realize the need to please large accounts and will attempt to cope with their demands. Indeed, more standardized approaches will develop out of a number of one-off systems that will be created between large libraries and selected booksellers.

Computer links to libraries and publishers

The value of direct communication with libraries and publishers falls into two categories -- internal savings and customer service value. Both are of importance to the library supplier because he must compete on service and those services can only be offered if they are produced at least cost to himself. All the library suppliers agree about the high cost of order entry. For those with multiple VDU stations for order entry and those with manual systems, there is the necessity of manual editing and sorting of incoming orders. The amount of this work varies with each system and the quality of the customers' orders. The percentage of orders that can be quickly passed on to VDU operators depends on the sophistication of the programs and search keys that will identify titles in the database if ISBNs have not been supplied by the library. Those booksellers who produce booklists and catalogs encourage their use in order placement, for it reduces the order entry work of the library supplier. They cannot require it and indeed most large libraries would never consider it as an acceptable way of ordering since they have multiple order files to maintain with library, catalog, location, and accounting information. To the opposite extreme, some libraries pass all this internal information on to the bookseller with the order either for him to ignore or to use in final processing of the book. In either case, it makes the order entry more complicated than keying from a library supplier's order form. Therefore, a system which has the library key in its own identification

number, ISBN (or bibliographic information if not matched on the database by ISBN), quantity, and, if part of the system order specific instructions, is quite labor saving for the library supplier. Another highly paper intensive area is the sending of reports to libraries on delay of delivery from publishers. Currently publisher reports are entered into the system and, paper reports are generated for all customers with that title on order. Most systems automatically print reports, but some only record them online and then type reports after determining from the system which customers hold orders. A direct link to a library could easily return this information and save the printing and mailing of the reports.

Once a compatible communications system was set up, invoices could also be sent, funds transferred, and other types of messages and service would be possible. The cost of telecommunications is such that for the present the essential processes that allow for time and paper handling savings are those that are being contemplated. Most library suppliers agree that the dial up access to search the database, the display of the data, and completion of a workform on the screen is more expensive than these systems need to be or could be. The present versions are experimental and geared to be "user friendly". Eventually, only a minimum of numerical order information need to be sent, e.g. ISBN, customer number, quantity, binding code. With these the library supplier could match against his database and customer file. The systems developing for supply of records to the library will necessarily carry more information but still need to be of minimal size unless they are true cataloging records, viewed as such, and this is factored into the costs of transmission. The latter point of catalog records brings the discussion from that of internal savings for library suppliers to services that could be provided through telecommunication transmission but that are not part of current bookseller services.

The most easy to derive benefit to libraries is of secondary value to them but not unimportant, speed of delivery. By speeding the order delivery into the booksellers order processing system, time is reduced for total time of order supply, especially if the bookseller has a similar link to the publisher. Without even considering the weekly batches of orders on most public library computer systems, a week could be cut out of the total supply time for regular orders just by the immediacy of the transmissions. If library orders were transmitted as keyed without any batching on the part of the library, two weeks from the time of library keying could be saved on the front end of the system. This speed may become more important as shorter print runs become more common.

Most important to libraries is the integration of these orders into their own computer based systems and therefore the automatic transmission of an order record to a library which chooses this manner of developing its system. Library

suppliers with large databases could offer two types of order transaction: the one where the library builds its own order record and only essential order information is transmitted over the lines to the bookseller; or the one where the library uses the library supplier's database for creating the order record which would be transmitted back to the library at that time or overnight. In the latter case, the library has saved the cost of most of the key strokes of order preparation but will pay more for telecommunications cost.

The reports of delays being automatically posted to orders is also time saving for librarians. Access to the booksellers file on demand could eliminate the need for claiming and reporting altogether with only cancellations being transmitted in both directions. Invoices could easily follow if library financial systems accepted machine readable billing.

A parallel situation exists between library suppliers and publishers. Publishers would prefer one source of entry into their order processing systems to eliminate all the paper and editing necessary before keying in orders. This is the principle behind publishers' installations in the Teleordering system. Libraries sort their orders and spread them among different booksellers. Booksellers in turn gather orders from several libraries and sort them by publisher. For many library booksellers this is done by the computer, and then the orders are mailed. The telecommunications link eliminates the post. The Teleordering system functions as a funnel of all the booksellers' orders into a publisher's system in a compatible format for direct order processing.

Library booksellers also expend effort and money in obtaining information on new books and enter it into their databases at the earliest stage that it is available from the publisher because the British Books in Print microfiche and Teleordering database is not early enough with this information. If the book trade system would provide a common source of advanced book information at an early enough stage to be of use to booksellers who wish to anticipate customer purchases, more booksellers would incorporate the book trade system into their own. This could help the smaller bookseller compete with the larger firms.

Hence, the library bookseller has much to gain by data available in machine readable form and transmitted directly into his system. The greater degree of automation, the more the library supplier sees the possibilities for savings in this area. For the samll library supplier without an online database there is little immediate value.

Some large library booksellers have seen the advantages and are developing packages of software for libraries to use that would assist in library system development and directly assist the library supplier whose system would automatically be compatible. Some librarians and booksellers say these systems

favor the developer over the competition which, of course, is the ultimate motivation for their design -- increasing the amount of ordering done from that library bookseller. Indeed, the approval plans and standing order services developed by library suppliers are part of the same type of attempt to "capture" a library by being its prime source of supply either by choice or by orientation of systems, in that ease and convenience for the library results in use of a particular bookseller. This is not evil, just good business sense, and if a library can benefit from the systems offered and not be penalized in service or cost, no negative feelings or suspicion should exist in the library/bookseller relationship.

RETAIL BOOKSELLERS

A recent unpublished survey of use of automation in bookshops done by the Booksellers Association yielded a small response. The Trade Practice Secretary, from her personal knowledge considers the returns unrepresentative. A review of the programs of the last three Booksellers Association annual conferences indicates that the use of computers in bookshops is not without interest for the members of the organization. Some booksellers have had machine based systems since the sixties.[4,5] As early as 1969, there was a proposal to expand the service of the Book Centre to include a computerized orders clearing service for bookshops and publishers. In 1975 the BA sponsored a seminar on the use of computers in bookshops in recognition of the work already done and the growing interest. At that time, there was prophecy of a generalized computerization of the trade culminating in computer based stock control/order record and bibliographic systems, and recognition that libraries of local authorities would eventually want to link their computer based systems to that of the book trade.[7,8]

Tradewide progress toward these general goals brought about the development of the Teleordering system and the participation of publishers, booksellers, printers, the library representatives and the British ISBN agency to work on the development of machine readable codes for the book trade. Although in their present state of implementation, Teleordering and the bar codes are not directly linkable, but they both relate to the ordering and distribution functions that are the key to efficient service within the trade and are attempts to lay common foundations upon which individual booksellers can develop local systems and upon which the book trade can expand current joint efforts.

From the Bookseller and discussions with people in the book trade it is clear that the following processes are presently automated in many bookshops: order transmission (Teleordering); accounts; sales purchase ledger; books on order; printing of orders and chasers; posting of receipts to orders; distribution to stock or customer; sales analyses; stock control. As the list proceeds toward the end, the numbers of bookshops with the latter functions automated drops. It is the large bookshops with multiple sites and large turnover which have developed on their own or with a software house batch and online systems to accomplish the routines of stock order and replacement, accounting, and to give sales data on a regular basis. The description that follows is a composite from discussions with booksellers and observations of the systems operating in three city bookshops, two of which have branch location stock in the system. The third will bring a new shop into the system in due course. All three of these systems maintain a stocked title database which varies in size with the size of the firm. The two shops with multiple locations had stock coded by location. None of the systems

incorporated the BBIP database to enhance information in the file. Basic bibliographic information on new orders with quantities on order for customer or stock are included but no great attempt to gather advanced book information is made. All systems print orders. One is linked directly to the Teleordering system. Orders are read by machine and chasers are produced. Upon receipt of books for stock or customer, stock slips are printed by the system and are inserted in the books for sales and reordering information in two of the systems.

Publisher files store address, order placement information, terms and minimum value of orders. A customer file stores addresses, account numbers, credit information, and delivery and notification requirements of particular use for library and mail order accounts. One system displays copy specific stock levels at all branches and has the capability for automatic reordering to predetermined levels based on sales and turnover. These automatic orders can be overridden by buyers if necessary. The other systems do not have this online inventory control, but both system developers were interested in the progress of point of sale data collection by machine readable codes and would consider installation when they judged cost and technical specifications right for their business.

All systems had varying degrees of sales analyses. One system had a particularly sophisticated regular and ad hoc reporting capability drawing from all accounting files with transactions in one file automatically updating the others and providing very current information on financial status.

Duet, a system not seen in operation but discussed with a bookseller who plans to install it, is marketed in Britain and the United States by Systems Software Ltd. The description provided here is based upon the promotional literature and the discussion. The previous three systems described were minicomputer systems. Duet is a turnkey package of microprocessor and intelligent point of sale terminals which perform normal cash register functions, capture sales information and automatically update stock files. Books and other items, go through the system and can either be keyed in or input through the use of an OCR wand. The system calculates, enters information of the sale into the appropriate system files, and prints out itemized receipts for the customers. Partial or total stock lists can be produced for different sort keys for multiple purposes. The title file is linked to the order file so that when a title is queried for ordering purposes or customer information, the total stock situation can be seen and duplicate orders eliminated. The order file generates printed orders and has the option of being linked to Teleordering.

Each of the systems described is in place in a bookshop which supplied libraries. For one bookseller library supply is a very large part of the business. In this case the bookseller had anticipated library plans to communicate orders to

him via VDU and telecommunications line, and has equipment available to install in libraries where there is interest in experimenting with this mode of communication. This aspect has attracted one of the purchasers of his system who has a number of academic library customers and a number of remote locations to bring into one management and stock control system.

Service to customers

For the retail bookshops the area of (library) customer service is much more narrow than in library supply firms. Those who have public libraries for customers do supply servicing as a matter of competition and terms of doing business. Some libraries require the smaller booksellers to meet the price of the large library suppliers; others make concessions, especially for the local bookseller. Those booksellers who supply books at higher than the national library supplier price say the prices still do not cover the work and materials and cut into margins. For books with low publisher discount, the bookshop loses money on the sale. The other area of servicing where the retail bookshops do not offer service is in the production of bar code labels for too large a capital investment is required, for a machine with no applicability outside the service of a limited number of customers.

Other services fall into the bibliographic area. They do not have a large collections of bibliographic tools, so verification problems are not their forte. The bookstores approval services are quite limited, but they will usually request examination copies for a library to consider before purchase. None have a customer service staff although individual managers or owners may visit libraries to solve a specific problem or consider a request. None have computer generated services as such, but those with Teleordering cited their increased efficiency and speed of supply and its implicit benefit to the libraries.

Computer links to libraries and publishers

For those booksellers who have installed computer based systems the value of direct communication with libraries and publishers is seen as similar to the value to the library suppliers -- internal savings and ability to compete as full service library suppliers. For these booksellers the orders are also manually edited and then keyed into the system for checking against stock and for order generation directly through Teleordering or by print. Two of these booksellers have called upon libraries to see if they are interested in testing or developing a way in which the library would place its orders directly into the booksellers system. Two other managers of university bookshops will be approaching the major customers, the university library, about a similar arrangement once software is in place and the retail side of the store is using the system efficiently.

The extent of the arrangements will vary greatly depending upon what the libraries involved have in mind for their own systems. For those univerities with a bookshop on campus, speed of order delivery is not important and the library entry of orders into the booksellers database is obviously of greater advantage to the bookseller than to the library unless that order is delivered as a subprogram of a library acquisitions system on a library's computing equipment.

For many academic libraries the possibilities of Blackwell's Bookline services become available through the library's traditional campus bookshop owned by the Blackwells Group. This will allow those academic libraries to receive future benefits in the developments of telecommunications and other computer based services in the book trade that an independent bookseller might not be able to afford or see as necessary for his level of operation. For customers of bookshops without the Blackwell affiliation, there will be little customized systems development possible from the bookseller. But, those booksellers with minicomputers systems make it possible for libraries to consider them in light of the future telecommunications links that will be available. It may be possible for academic bookshops to provide records of acceptable content and format to libraries, but size of a bookseller's library business will be an important factor.

The one hundred and ten booksellers using Teleordering see the value of a telecommunications based link with publishers. As participants in Teleordering they listed this and other benefits they accrue from the system in a recent survey.[9] Many more agree in theory about sending orders in this manner, but are concerned about the cost of the system in relation to those particular businesses or cite the lack of participation of publishers as their reason for waiting.[10] Among all the library suppliers and retail booksellers interviewed only the two largest and the two smallest had reservations about its applicability to improving their efficiency. Twenty five per cent of the library booksellers and college and university booksellers listed in the current directories are participants which is a large percentage considering the small representation among the whole membership of the Booksellers Association.

Libraries who use the retail booksellers for a large proportion of their book acquisitions will benefit indirectly at first from the book trade developments in the use of Teleordering, machine readable codes, and inventory control and point of sale systems. The general efficiency in service and management should increase as well as profitability so that some enhancement to systems for library supply will be possible. The retail bookshop will never reach the level of customized computer based services of the large library suppliers, but it and

its customers should not be left in the paper-shuffling dark ages of library supply unless it is by conscious choice of librarian and bookseller.

BOOKSELLER ABILITY TO RESPOND TO LIBRARIANS' REQUIREMENTS FOR COMPUTER BASED SERVICES

From discussions with booksellers and the review of their operations I have gathered opinions and facts that indicate that most library suppliers are interested in accomodating their customers, but that the scale of effort will be varied depending on how a bookseller views his current business and potential market for these services. As a summary of bookseller capabilities and plans to offer computer based services to libraries, I have listed the available or soon to be available services in relation to the library requirements listed in section one (page 38).

I Booksellers recognize librarian concerns and plans for integration of systems.

(a) At present, a library must provide integrating software to link the bookseller data with the library's bibliographic and financial systems. Individual libraries may agree to purchase for actual payment, by record use, or by increased volume o orders customized software developed by the bookseller. How far booksellers are able or willing to pursue this is debateable within the bookseller group.

(b) Most bookseller systems would be capable of generating statistics on a library's order activity. Unless a bookseller provides a total acquisitions system package, the comprehensive statistics will still be the responsibility of the library.

(c) Little work has been done in this area because cooperatives have not seriously considered bookseller system capabilities.

(d) Although booksellers agree that libraries should choose booksellers freely, it is their individual aim to provide service that will result in increased orders to them.

II Technical capabilities to meet requirements exist.

(a) Booksellers with computer systems will be able to accomodate either direct or dial up access, but for reasons mentioned above, they would prefer a more exclusive link with a library.

(b) Because of librarians insistence on access to multiple databases, it is to the booksellers collective advantage that they follow some standardized approach to their systems.

(c) Increased standardization in terminal design will allow libraries to use equipment in place to access bookseller systems.

(d) All booksellers databases now available provide for direct order entry which is to the advantage of the bookseller.

(e) If the library has the software and capacity to hold the orders, booksellers will be able to transmit order records to the library in acceptable formats.

(f) Most computer based systems have or could have equipment to generate machine readable report information. Booksellers would prefer reporting in a batch mode rather than in individual typed or printed reports.

(g) No library supplier has true stock level online. Machine readable codes will permit this to be done more easily, but booksellers are reluctant to provide this information and doubt if it will be of general use. They believe that the cost of making this information available for the few that would use it cannot be balanced by use of the information or increased orders as a result.

(h) Some booksellers who have equipment or could install machine readable information would prefer this to be the limit of the computer based services. Others see it as a way station to use of telecommunications for all book and serials purchase transactions.

(i) Booksellers agree that competition in computer based services will be on their applications programs.

III Economic considerations are of concern to booksellers as well.

(a) Booksellers with operating systems see financial benefits in the form of savings from direct order systems and are looking to produce statistics from their customers to compensate for the lack of cost analyses in most libraries.

(b) Booksellers will offer a variety of modes of access and levels of use of their systems to satisfy large and small customers.

(c) Some booksellers think they can develop a turnkey package that will be cost effective for libraries.

(d) Booksellers realize that costs must be reasonable.

(e) Some booksellers see declining library budgets as a reason not to get involved beyond the basic level dictated by their competitors. Others see savings to the libraries as the most important reason for these systems.

IV Effective systems for libraries should also be effective for booksellers.

(a) When bookseller and library systems are designed for data exchange in machine readable form, much paperwork and most files can be eliminated for each group.

(b) Booksellers contend that the content of their databases is the key reason for a library interface.

(c) Use of records already created by booksellers cuts transcription errors.

(d) Systems which will be designed to eliminate duplicate effort provide information, produce personnel and paper processing savings. These savings will in turn need to be applied to the cost of implementing machine based systems, but in the long term will mean true savings for libraries.

(e) Well designed software will provide increased information to libraries and booksellers.

(f) Speed in order entry and order processing leads to faster supply of books and the ability to cope with short print runs.

Library suppliers in the United Kingdom and the United States are generally reactive in terms of marketing these computer based services. Most will not formulate systems such as that of Baker and Taylor and Brodart and market them because of the comparatively small size of the companies and the amount of financial investment needed. Also, in Britain, most library suppliers will not formulate systems to sell because of the smaller number of potential customers for these systems. Large library suppliers will respond to librarians' requests to provide interactive computer links with the library if the specifics of these requests do not disrupt the basic internal operations upon which their system rests. Yet, almost all booksellers are open to redesigning systems to keep competitive with each other. Therefore, they are interested in what librarians' plans are for use of machine readable records. Two library booksellers with online access to their databases addressed a group of librarians with just such pleas for

information on how the librarians view the usefulness of their systems while a third bookseller proceeded to describe what libraries need and how booksellers could deliver this.[11] But, as a group, booksellers do not see their role as one of leadership, but support. Ironically, at the present time, many library suppliers have more technological capability and flexibility in programs than the librarians. Also, in contrast to librarians, they are able to put costs on and limits to their systems and are able to see where profit and service interact or diverge.

Retail booksellers who also supply libraries are in a different category for they do not have databases or large order processing systems that can spin off library products such as booklists, customized invoices, book labels, catalog cards, or machine readable order records. At present, the most automated would probably only be able to accept an order directly into their systems and forward it to the publisher. Herein lies the dilemma. The academic librarian with the most sophisticated needs of bibliographic records, availability information, non-trade publications, integration of serials into their databases, and analysis of orders and accounts have the booksellers least in a position to provide any of the information to them. Therefore, library planners do not look toward them for solutions or services. This in turn reinforces the booksellers' in thinking that they do not need to have these services available for libraries.

Booksellers will need to declare themselves as offering a selected range of library services and give up the image of providing all services for it is obvious that all library suppliers will not be able to compete equally in this area of expanded computer based services. The market is now structured by type of library, and it will continue to be so. Some booksellers will become full service operators and others will offer a more limited range of services. This is not necessarily a disastrous situation for all libraries will not progress to the same level of requirements for automated services. Many libraries will be content with a system wherein the library holds its order file on microcomputer and sends and receives messages through it. Likewise, the cooperatives' systems may develop to the stage of integrating their systems with that of the library suppliers who may only be required by customers to receive and send messages via the acquisitions module.

Other libraries will see the benefit of the bookseller handling some functions at a fair price and saving the library the cost of programming. A good example of this is the service given by Faxon and Blackwells in journal supply. Both firms handle subscription placement, check-in, labeling and shipment to some libraries in addition to being subscription agents for the great majority of their customers. Both firms provide this service for a price, primarily for

overseas customers, but Faxon is also under contract to the National Library of Medicine which has foregone its periodicals check-in staff in favor of the clerical work being done on a contract basis by subscription agents. The commercial/library divide may need to be reexamined by librarians who are looking for ways to stretch their resources. If a bookseller can offer services and software at a cost recovery and/or profitable price, it should not automatically be rejected as commercial, especially if the library finds the nature of the services appropriate to the library and does not have the staff to provide the software or function itself. Pursuing this approach, two American library network staff members have outlined the mutual benefits to be derived from cooperation between commercial system suppliers and library networks.[12] Although they do not discuss book supply systems specifically, their views are applicable in this area as well. Libraries, cooperatives, and commercial firms are all engaged in internal planning based on each others capabilities and needs. Librarians are involved with planning the use of commercial and/or network services within their own contexts. Networks are just as interested as commercial vendors are in what is desireable and acceptable for libraries, in determining the libraries' priorities, and in focusing competing perspectives of need and difficulty of design and implementation. Networks and commercial systems are competing to supply services to libraries. Open discussion may lead to the networks helping to finance development with commercial services for the common benefit of network members. The American library network functions differently from those in Britain, but its general goals are the same. British cooperatives should not rule out consultation with and possible purchase of services and systems from commercial sources for their members.

PUBLISHERS

Most publishers and librarians do not have a direct relationship in book supply in Britain for both use the intermediaary distribution services of the bookseller. However, many library orders for non net books are placed directly to publishers and filled by them, generally for the convenience of the library but also because a publisher may choose not to use an intermediary. If it is convenient for the librarian to avoid the bookseller, then it is usually either a case where the publisher is in the category just mentioned or a case of inefficiency and ineffectiveness on the part of the bookseller which can be remedied by the librarian by change of supplier. In the main, most library orders for monographs go through the bookseller with the result that the knowledge and interest of libraries' requirements and internal systems by publishers is of secondary importance as is the librarians' knowledge and interest in publishers' systems and requirements.

Because of the nature of this relationship, only the publishers' concerns for automating their internal systems that support order fulfillment will be considered here. The issues surrounding electronic publishing which are of concern and importance to publishers, libraries and the public, are out of the scope of this report. It is acknowledged that the same telecommunications and data storage technologies used in ordering and fulfillment systems and those technologies even more advanced apply to electronic publishing. And it is hoped that the publisher/bookseller telecommunication interactions for supply of books will be part of the standard operating procedures when electronic publications become available.

The editorial use of computers is one which will develop rapidly through the decade and culminate in electronic publications for some publishers. The use of word processors in text preparation is of interest in the aspect of the acceptability to a publisher of electronic communication within his own organization and the relationship of editorial user of computers to the internal management systems being built for the first time in many publishing houses. This acceptability will provide for a greater amount of precise and current information available for decisions on print runs, stock levels, and profitability of specific titles or groups of titles or specific markets. It will also provide for a more coordinated control of bibliographic stock information to be reported by the publisher to the bookseller and public and which should eventually be transferred in a telecommunications mode. For example, the present reporting of advanced book information, reprinting status, and stock status, all handled by editorial staff, may not be part of the computer based system of data collection, provision, and analysis. So, pieces of paper fly between offices to update status within and outside the organization. One publisher stated that one of his objectives was to

have his online system be a net for catching all of the loose pieces of book information needed for different parts of the firm and the world outside, Whitakers, British Library, individual booksellers, and coordinate their dissemination in an orderly and timely manner. This will replace the masses of papers and printouts and meet internal and external deadlines for information.

A significant by product of involvement with internal systems management and transmission of data within and external to the organization via telecommunications is a greater recognition of the future of this field of electronic publishing. The articles denouncing the idea fill as great a file as those heralding the paperless society. Most moderates recognize that the fierce defense of the print format comes from a lack of experience with the capabilities of systems envisioned. The Book House Training Centre has been established for educating members of the trade.[13] Courses on computers and the editorial process, the new environment for publishing, competitive markets involving or springing from the new technology are all predicated on the industry's acceptance of the general trends in technology and what will soon be available for widespread use. This acceptance includes taking advantage of the capabilities of new developments in computing equipment and telecommunications to process data, reduce staff, and to supply management with figures from production, finance, sales, and editorial divisions in an integrated and meaningful way.

The earliest applications of the "new" technology were in accounts and in printing and book manufacture. In 1965 a symposium on automation and electronics in publishing placed emphasis on printin .[14] At a similar seminar several years later, typesetting, data entry, and video editing were discussed.[15] Five years after that seminar, the Primary Communications Research Centre was summarizing for the scholarly publisher all the options presented by the new technology already in use by larger more commercial publishers.[16]

Accounting systems for credit control, invoicing, statements, royalties, sales statistics are common and have experienced evolution from batch processing to online systems. Many publishers are on their second system or are upgrading an online system by looking to purchase software packages for areas of information processing that they had attempted to do in-house before or had previously omitted because of the complexity or expense of programming and equipment. Likewise, smaller publishers are purchasing package systems which require no data processing staff on hand or are purchasing the services of service bureaux who hold the database to which the publisher has access via a telecommunications link.[17]

Distribution and order fulfillment are usually seen as part of the house-keeping systems necessary for production of information as well as for processing of orders. There is increasing visibility and discussion of distribution related

systems in the trade literature.[18,19,20,21] Examination of the importance of the publisher's order fulfillment system has been occurring regularly throughout the trade. Meetings, seminars, and articles focus on the need to reduce the costs and increase the efficiency of warehouse operations, order fulfillment, post-order service, and physical distribution. The speed, accuracy, and cost of order fulfillment continue to be a concern of management and an important factor in library-bookseller-publisher interactions and will occupy the attention of all sectors while they implement telecommunications links in the decade ahead.

Most publishers order entry systems run similarly to those of the library supply and retail bookshops described earlier. Publishers maintain files of orders, customers, titles, stock status, sales, purchase ledgers, royalty payments. From these files are created invoices, sales statistics, stock control documents, catalogs, and inventory lists. The degree to which these functions are integrated into one system varies greatly among publishers. It is the opinion of several Publishers Association Distribution and Methods Committee members that all large to mid-sized publishers require this type of system and have the makings of it. They contend that large publishers have sophisticated processing and data gathering systems. These systems revolve around the title file and order entry. First there is the manual editing which includes coding of customer, credit checks, and review of orders to note discrepancies. In some cases booksellers orders are rewritten onto data input workforms so that VDU operators do only routine file interrogation and typing. Orders are keyed into the title file which shows title availability. Orders for books not in stock may or may not be recorded. Picking lists or out of stock or cancellation notices are printed as appropriate. The work proceeds to the warehouse. Data is entered into the system again at point of invoicing the shipments. Information for stock control also may enter the system at this time. Returns are processed in the warehouse but data is handled by accounting personnel. This may change with applications of machine readable codes. The manner in which books arriving from printers and binders are entered into the system depends on the individual publisher, but usually goods-in supply levels and other production information are available to be used with sales analysis data to make decisions on new print runs. The aims of these systems are to reduce the data handling and to provide information to multiple use points. In the design for an upgraded system, one distribution director stated that the aims are to provide the computing capability for the new concepts, new flexibility in service his unit can provide for future changes in business patterns, increased analysis of internal efficiency, generation of customized reports on demand by management, and keeping current and future costs in check. These aims are to be met by the software which is becoming available from the "outside" and with machines with greater storage and processing facility than the earlier systems provided.

In the current handbook on book distribution (1972), the Publishers Association made no attempt to consider orders forwarded from booksellers by any means other than paper. It did recognize the value and probable increasing value of ISBNs.[22] However, in the ensuing decade, the Publishers Association has become increasingly concerned with the technical and economic side of publishing. A review of the last three PA annual reports shows new committees and increased activities of other committees geared to increasing productivity, economy, and sales. The longstanding Distribution and Methods Committee has dealt with Teleordering, Machine Readable Codes, Standard Account Numbers, and the problems in the use of ISBNs. Two new groups, the Book Marketing Council and the New Media Panel, reflect the interest in the changing economic and technological environment. The association can only research, reflect, and recommend action to its members, which are, as in the case of booksellers, entirely free to make their own decisions, but the 1980/81 annual report recognized that the PA is being forced to lead where it has previously preferred to leave decisions to the judgments of individual firms.[23]

TRADEWIDE COOPERATION: MACHINE READABLE CODES AND TELEORDERING

Machine readable codes and Teleordering enter here as industry sponsored technology to be incorporated into the information processing systems of bookseller and publisher. When fully implemented, both new developments will have design implications for workflow within individual businesses and for the future shape of booktrade systems as a whole. Both have their critics, and rapid universal adoption will not take place as the rocky two year history of Teleordering demonstrates. The fullest description of the ideas behind and uses for machine readable codes (MRC) is a report of the joint committee that developed them.[24]

Machine readable codes on books present several problems to publishers. However, these problems appear to be the type which should be easily solved when the publisher has done an analysis of how best to use the codes in his system. An unknown to MRC developers was the current capability and flexibility of the publishers' internal systems in dealing with these codes. The basic cost to the publisher is the preparation of the film master for each title and edition. When a publisher uses the codes internally he will also need to acquire equipment for data capture. Reprinting of editions will also require new masters and covers and presents a conceptual and financial problem for backlist titles. Also, publishers have been notorious for errors in allocation of ISBNs. In this area where systems would be reliant upon numbers there is little room for the errors that some booksellers cynically predict. However, in spite of these problems, the representatives of the Publishers Association feel that the publishers responsible for most new titles and the greatest sales will have machine readable codes in all their new books by the end of 1982. Leading paperback publishers will accomplish this earlier. By the end of 1983, all backlist items that sell regularly will have them.

The publishers who stand to attain savings most quickly are paperback publishers who process large numbers of returns (several 10s of millions of books each year). At present, ISBNs, quantities, and customer account numbers need to be keyed into a publisher's system in order to adjust sales ledger, royalty sales, and bookseller credits and to update stock records. Software will be written to make all these separate processes, which can now take one week to several months depending upon the efficiency of the publisher, one process. Thus returns processing will be accomplished with the reading of a MRC by a light wand or laser reader for entry into the publisher's computer.[25] All publishers will gain in warehouse operations of checking material received from printers when the printers packs are so coded. Likewise, large shipments to booksellers or

wholesalers could also be coded for easy checking-in of orders.

Other areas which will benefit will be inventory taking and quality control checks in order fulfillment. The possibility exists of publishers' representatives ordering by hand held data capture devices via Teleordering from a publisher's catalog which would contain the codes. Another value to publishers will be the sales analysis possible beyond the figures now available. With the cooperation with booksellers also using similar point of sale systems more specific geographic, chronological, and bookshop level information can be made available on the effects of advertising campaigns, TV and radio shows or local events. The publisher bears the costs of the new bar codes which many have said will benefit the bookseller more than the publisher. This view is the narrow one which sees only the cost of production and equipment. The benefits in stock control, order fulfillment and analysis, and sales information are there for all publishers to receive.

The advantage for use of MRC by booksellers is the stock control and sales analyses. Where before the keying of the ISBN at the time of sale or stock taking was onerous and inhibiting, the MRC on books will make it possible to gather information at point of sale or stock checking that would be transferred to a mini or micro for stock updating, sales analysis, or order generation. It could also be used for checking-in shipments from the publisher and order entry into Teleordering if printed materials from publishers carried the MRCs and if light pens were installed on the Teleordering terminals. Booktrade spokesmen have also predicted the demise of stock control slips and the ability to decrease slow moving stock and improve turnover.[26]

The acceptability of systems based on machine readable codes, of course, relies on the availability of the codes. Therefore, the publishers must be first to accept the use and applicability of the codes to the whole trade. Limited participation will have far reaching effects for design of bookseller systems which will then effect the use of the other trade system, Teleordering.

This discussion of Teleordering is based on two premises: that it is a functioning system of telecommunications between booksellers and publishers and that it is symbolic of the future shape of booktrade operations and cooperation. At the present time, it is only indirectly related to library supply as it is used by individual library booksellers. Twenty five percent of the library booksellers and college and univeristy booksellers as listed in the current Booksellers Association directories are participants in the system. This brief overview of the history and issues surrounding the development and use of the system by booksellers and publishers is based on discussions with booksellers, Booksellers Association staff, publishers, and the trade literature.

An account of Teleordering's history begins in 1976 when a group of British book trade delegates interested in improving book distribution visited the Licen-

brink wholesaling and distribution operation. The basics of that system include a large wholesale and distribution system for over one third of German books in print, in which orders are placed by booksellers through numerical codes on small terminals (LITOS) which are supplied free of charge to the booksellers by Ligenbrink. For titles in stock, there is 24 hour delivery. In June of that year the Booksellers Association held a LITOS Ordering Terminal Seminar for members of the trade to discuss whether the German concept was useful to United Kingdom publishers and booksellers. At that time, it was projected that a similar system would cost participants £400 a year. Sufficient interest was demonstrated for the Publishers Association and the Booksellers' Association to seek tenders for a system. One year later, in late 1977, the contractor was selected to develop an ordering system that went beyond the LITOS terminal concept. The system was to include bibliographic information, order confirmation, and to accomodate prospective developments in the book trade, machine readable codes, and point of sale and inventory control systems in bookshops. It took over 18 months for the two associations and the contractor, Systems Software Ltd., and its subsidiary, S. S. Teleordering Ltd., to negotiate contracts and finance, and produce a system which began its test period in July 1979. During these 18 months, booksellers, and publishers read articles and heard speeches on the features of the system by enthusiastic members of the original visiting party and by the two associations' officers and representatives. In the two years that it has been operational, there has been a slowly increasing but quite modest subscription by publishers and booksellers. In August 1980, the operator SST Ltd., experienced a financial crisis. The numbers of participants who had joined in the first year were too low to sustain the costs of operating the system and both associations went to their membership to urge and plead with unenthusiastic members to support the system. As of September 1981, 110 booksellers send approximately 11,000 orders per night to all publishers. 63% of these orders go to the 40 publishers participating at various levels in the system. Only a small percentage of these publishers have direct computer communication or receive the orders on tape ready to run onto their system. The small number of orders is an increase of 60% in volume since January 1981.[27]

Booksellers key their orders into the self-contained terminal designed for the Teleordering system. The terminal has a programmed microprocessor that handles input, validation, and other order handling routines, a printing mechanism and internal data storage. Books are ordered by ISBN or by bibliographic data if an ISBN is not available. The bookseller's order is identified to the system by the Standard Account Number which is programmed to be included with all orders sent. The validated orders are stored during the day. Transmission to the

publishers takes place overnight when a Teleordering computer polls each terminal and extracts from it data which is collected and accumulated on magnetic tape and then transferred to the main computer for processing.

Before being transmitted to the publishers, the orders collected are run against the British Books in Print bookfile. Orders in ISBN form are expanded into full bibliographic descriptions. Those with ISBNs not found in BBIP are transmitted to the publisher by ISBN prefix codes stored in the system. Orders are re-sorted into transmissions of orders to publishers and transmissions of confirmations and status reports to booksellers. Orders for individual publishers are transferred to the polling system computer for automatic transmission to publishers' terminals or publishers may choose to poll the system at a specific time and recieve their orders into their computer. Two other options are the receipt of orders on magnetic tape or receipt of printed orders distributed centrally through the mail. All publishers, whether participants or not, receive orders through the system.

The bookseller's terminal can be programmed to suit local requirements such as an experienced user fast entry mode. The program has data fields for use in internal bookshop processes. It is possible to bulk orders to avoid small order charges; a light pen can be added to the terminal to use in data entry at a later date. The terminal also receives messages from the Teleordering central computer --confirmations of orders transmitted the previous night as well as out of print and other status reports that are available from the BBIP file. In sum, the system accepts all book orders for all British publishers and transmits them over telephone lines to the Teleordering computing system which validates, sorts, and transmits them via telephone lines or post to publishers and sends confirmations back to booksellers via telephone lines.

Bookseller concerns

Many of those booksellers who have joined the system are in the middle to large range with one or more sites and who have sufficient amount of stock and special orders for this type of order entry to streamline procedures and save staff time. The extremely small bookseller with very few staff and small stock has minimal staff to cut, and the cost of the equipment and annual fees might never save enough stationery and postage to make the system attractive as priced. The largest bookseller with multiple branches and most of the large library suppliers already have sophisticated order processing systems which, except for transmission directly into the publishers' computers, do the same job as Teleordering off databases the booksellers claim to be more suitable for their type of business or which in two cases already include BBIP. Some of the largest booksellers would have the capability for transmission directly to the publisher

if the publishers were prepared to receive the transmissions.

W.H. Smith is the only large bookseller using Teleordering which they operate from their Swindon facility. Their Bowes and Bowes shops also use the system in individual shop installations. Critics are quick to point out that W.H. Smith is a stockholder in SST Ltd., and therefore has a vested interest in economic success of the system. The other large groups of booksellers vary in their commitment. Several of Blackwell's University Bookshops have individual installations, but the major bookbuying operation does not, primarily because th system predates Teleordering and uses the BBIP tapes. The Pentos group has announced its intent to participate, but there have been no equipment installatio because of the systems review and development that is taking place within the group. One can imagine that the smaller firms are trying to out guess the "real reasons behind the public statements of the large booksellers on their lack of participation. Many have exhibited the "they must know something we don't" syndrome about its technical capabilities or impending demise or...

It is clear that without the participation of the largest booksellers who could dramatically increase the number of order lines per night and thereby in theory increase participation of the publishers, the system will have alimited future. It should not collapse, but it will not develop and fulfill the needs that many booksellers are yet to identify but which will be evident as booksellei install order and stock control systems, and as publishers automate their order entry and stock control. The managing director of SST Ltd. has said that the company is in business forever and a day,[28] but the nature of that future witho much change in numbers or order lines and publishers is quite unspectacular.

Many of the present users see this as stage one, not the ultimate system. Many of the detractors fault it because it is not the ultimate, comprehensive bookseller system for them. Price also seems to be a major factor. Lower cost for present service capacity would probably increase the number of middle sized booksellers using it. However, this increase in membership would not swell the order lines sufficiently to contain the costs let alone lower the costs of forwarding the orders into the publishers' systems and attract more publishers into participation. The developments predicted all require investment funds which are unlikely to be forthcoming without a sound financial grounding and surplus income for development. The investors surely will not want to add incre sums with risk of losses to those already stated. Improvements such as redesign of the bulking procedure, order consolidation for publishers, hard copy layout, availability of larger and smaller capacity terminals are relatively easy to accomplish but will not alter the basics of the present system. Any other changes such as the reporting on orders directly back to the bookseller by

publishers, linking with stock control systems that are being developed and designing an online system which would give instant feedback on order status and stock availabilty at distributor or publisher are all dependent upon great investments of money. One then assumes that higher fees would also be necessary to pay for the operation of the enhanced systems in the bookshops.

Whether Teleordering will be the vehicle for expansion of trade systems is certainly debated by many booksellers who are reserving judgment and money. If Teleordering is withdrawn and not replaced by another tradewide effort, then it will only be a matter of time before large wholesalers and large purchasing groups will organize their constituent parts into a system of centralized buying and establish time share telecommunications links with publishers to do the same tasks Teleordering proposes to do for the whole trade. Both large retailers and wholesalers in the United States have developed a means of communicating orders to publishers in machine readable form and some are communicating online. The publisher who recognizes the advantage of bulk order fulfillment for large customers will readily accept these book orders, and in return, send reports, invoices, and book information down the same telecommunications "line".

John Read, Research and Development Manager for W.H. Smith's retail group and a director of SST Ltd., was quoted in the Bookseller as saying, "If Teleordering does not come now, you are going to get lots of private systems being developed to the disadvantage of the smaller non chain booksellers. The large chains will have to develop their own system and they will not necessarily be trade led".[29]

The large booksellers will certainly not edge out the smaller booksellers for publishers will accept orders from all sources. Yet, one could assume with many telecommunications based order entries that the old fashioned paper order system may take a back seat to the automatic system. Without a generally available telecommunications system the middle sized and smaller bookseller will bear the cost of the establishing of their own telecommunications links with the publishers or continue to use the post which may not remain at a constant level of cost or standard of service. In a letter to the book trade, the Director of Telecommunications Users' Association tried to offer insight into the future. "...it is worth emphasizing the cost and service advantage of moving from a mail to a telecommunications based system...The postal side of British Telecom will remain labour intensive...It will therefore find it difficult to hold prices in line with inflation and maintain service at current levels...If the trade holds back it will run the risk of having to catch up in the mid 1980s possibly by participation in fragmentary schemes."[30]

Publisher concerns

The resistance toward collective action within the whole book trade is shown in the highly visible problems surrounding the acceptance of Teleordering by publishers. Teleordering is seen by many publishers as a system which costs a publisher more than he can gain in internal savings and which has more tangible benefits for booksellers. It is the long view versus the short view of where these separate but soon to be interconnected systems will enable publishers to change practices, maintain or save handling costs, and receive added value services.

The Teleordering promotors, Systems Software Teleordering, the Booksellers Association, and the Publishers Association, have filled the trade literature with the proposed benefits of the system for publishers: the delivery of high quality orders directly into the publisher's system, i.e. computer, if he has one. Thus the pre-input edit is not required nor is the keying in via VDU. Since the customer actually does the data preparation and input, the publisher saving is made at the point of order entry. Other savings should come in the reduction of fulfillment effort and follow up paperwork that comes from errors in transcription, interpretation, and identification. Eventually, customers abroad will be able to transmit orders via Teleordering which should increase the use and value of the system.

At present, from evidence received from discussions and the literature, it appears that the Teleordering system is not cost effective for any publisher. The number of bookseller order lines received by any publisher does not allow the publisher to eliminate staff from editing and VDU operations. The cost of participation in the system is high in relation to the number of order lines received. In addition the most effective use -- that of direct computer to computer transmission of order lines -- costs even more, for the publisher must pay for a customized interface betwe his hardware and that of SST Ltd. This additional cost may drop if enough publishers with similar computing equipment cooperatively pay for any interface developments.

Only one third of the number of booksellers who stated their initial interest in developing a telordering system have joined. Neither has there been enthusiastic response from the Charter Group of the Booksellers Association. One of the most dramatic effects and most negative is the increase in the number of small orders that are being sent via the system. This is, of course, the bane of all publishers. Large bookselling groups and library suppliers could increase the number of lines and size and value of orders and create a more cost beneficial reason for publishers to join Teleordering rather than the faith in the future of telecommunications in the industry that is required now.

Publishers seem to be waiting for the system to become more responsive to their needs. Many wish to return confirmations via the system to customers and updates to the British Books in Print database on status of publications, price changes and similar information. They wish the central database to be enhanced to allow for all possible bookshop publisher orders to be done via Teleordering. At present, the system cannot handle orders for special promotions, specific covers of editions that bear the same ISBN (Bibles primarily), special quantity order packs, and book related materials that are free or charged for by the publisher. They would like editions to be linked on the database so that a bookseller would know the availability of a paperback edition if the hardback were noted on the database as out of print. They would also like their sales representatives' orders to be entered via the system in an overall goal to reduce the number of order entry points. The development of the latter system is possible but requires an expensive revision to SST equipment and design for representatives to dial into the computer at random time. The present system is based on the SST computer doing the polling of the bookseller terminal.

As an alternative to the present configuration, some publishers see a system database that is ISBN based but expanded in product coverage. The system would have the capability of transmitting orders through a comparatively inexpensive terminal or number pad which could be given away to booksellers with the strong recommendation to order via it or suffer delays in order processing. This is the original LITOS concept which does not provide for as many bookseller needs as the present system does. The burden would be on the bookseller who had online access to BBIP and plans to link their internal system to the Teleordering terminal. The publisher terminals would not be expensive or multipurpose and would have the bookseller bear the cost of any internal system links to the publisher system.

Prestel is also seen to present publihsers with opportunities in its third party databases in the Gateway system. Publishers' representatives and booksellers could place orders through this mode of access to individual publisher's systems or any industry ISBN-type database.

Teleordering planners see cancellations, claims, requests to return, enquiries, confirmations, and on demand communications with the central computer and other system users, but financial constraints limit any development beyond the current situation until a greater number of users is found and the finance is secure. So, no elaborate plans for remounting the database and reprograming the systems have been announced in order to increase publisher participation.

As with the bookseller, the problem for publishers is that the system is both ahead and behind the times. Not enough of the publisher and bookseller

systems are in place. In the majority of situations Teleordering would supply a Telecommunications link between two paper based manual systems. It is too sophisticated and costly a system for the small bookseller and publisher to install for it cannot automatically link systems which do not exist. For the booksellers and publishers who have inhouse computing equipment, it will supply the automatic link but at an expense too great for the benefits seen to be available at the present time.

One concludes from discussions with booksellers and publishers that the greatest present need in each group is to make internal systems efficient and to be able to have financial and management information readily available for decision making on purchases, print runs, pricing, and allocation of sales staff. Teleordering does not address these needs for either group, but is based on the assumption that both groups will have internally efficient systems and be desirous of a link between them to complement and extend the efficiency. It requires the bookseller to look upon Teleordering as more than a substitute for post but as an extension of his order processing system. It requires the publishers to look upon Teleordering not just as a booksellers' system that costs them money, but as an adjunct of their internal system. This is similar to the publisher's recognition that the bookseller's need for accurate and early information on new titles, editions, and prices, will result in more accurate orders with less post order servicing for the publisher.

Thus, Teleordering's success or failure is a tradewide question and concern. It may not be able to exist financially in its basic form of order transmission until all the booksellers who wish to install other inventory control based systems first, and all the publishers who want to upgrade their internal systems first in order to receive data directly into the system are ready to participate.

If the system folds, it is probable that the blame will be put on too tough economic times for the book trade, poor preliminary market analysis, and poor marketing efforts by SST Ltd rather than the general unwillingness of both groups to look analytically at their collective future and prepare for it. In a discussion of Teleordering in his study of U.K. publishing, Peter Curwen concludes, "...it is an even graver cause for concern that the possible demise of the system provides further concrete evidence of the book industry's worst feature, namely the refusal of the different sectors of the industry to recognize that what is good news for one sector is not b definition bad news for another. Thus, the participation of much larger numbers of both publishers and booksellers would not merely insure the success of the scheme but would provide that awaited glimmer of hope that cooperative ventures are not doomed to failure."[31]

Yet, despite the symbolic failure of the trade to demonstrate its awareness of the current and potential technology based benefits for the trade in an area of mutual concern and its inability to cooperate fully in a joint effort, all the benefits derived, all the experience gained, and all the words spoken over the three years of development and implementation will have served a purpose. Those who have used the system see its importance. They are trade leaders and will not let the advances recede, but if there has to be another system because of the financial demise of the present one, the booksellers and publishers who have worked so hard to bring Teleordering into existance will have to work even harder for that new system.

The future of Teleordering is the future of cooperative effort in the trade to move into the next age of communications. The printed book, here for 500 years and with an equally old distribution system, will begin to take different forms as will the systems to distribute it and the capacity to acquire it. In an era in which the electronic book is possible, the same telecommunications links should be applicable to transferring information about the existance and availability of the traditionally printed book and enhancing the delivery of it into the hands of the user. The only long term solution that will provide a transition into the telecommunications based future of information transfer is a tradewide effort at solving the interdependent problems. A widespread acceptance and use of machine readable codes by publishers and booksellers in their stock control systems will revolutionize the shape of the traditional operations. Teleordering in whatever form it will finally take will be a necessary and inevitable link in the two machine based systems. Instead of a solution in search of a problem, it will be the only solution for most publishers and booksellers who will not want their systems to go backward to a paper interface.

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SECTION 3: THE DIRECTION OF LIBRARY/BOOKSELLER INTERFACES

PROBLEMS IN DEVELOPING LIBRARY/BOOKSELLER SYSTEMS

Determining the market for services

I use the word market because there is, at present, a situation in which libraries are beginning to become aware of the technical and system design possibilities of direct computer interchange with their book suppliers. Librarians are interested in what the content, format, and scope of telecommunications based information and other services is currently or will be and what interim solutions are available to them at what price. They will need to evaluate this information gained from the trade against similar information from other likely sources, taking into account their own circumstances and the modifications necessary to their own practices and the cost in personnel, equipment or cash.

Booksellers, but primarily library suppliers, are beginning to see how the data already available within their systems is of use to libraries in a machine readable form and could be even more useful if more sophisticated linkings between systems were made. They are interested in the content, format, and scope of services that will be expected or desired by libraries, the extent to which they will be able to respond to those requirements with their present systems, and what modifications will be necessary, at what cost to themselves, and with what expectation of increasing turnover or profit. There are two additional questions for each bookseller who thinks he may not wish to consider this new market for services or who believes he cannot profit by it. Firstly, have his competitors come to the same conclusion? If all the competitors come to the same negative conclusion, i.e. not to offer these automated services, then progress along these lines will cease between libraries and their suppliers although a number of one-off developments will remain. If the competitors go ahead with book ordering interfaces, the second question then arises, will the bookseller who chooses not to develop computer based services find it profitable to compete for orders among the less automated libraries?

So, the situation exists where librarians are waiting for their suppliers to declare themselves in the area of future services so they may pick and choose among them as they do at present, and the booksellers are waiting to see what the librarians really want, how many of them will want "it" (whatever "it" is) and what librarians will be willing to pay either in terms of increased business or in development costs in order to achieve their system's goals as well as what the competition will do in this area. Each library supplier with a computer system which has potential in this area is doing some market research among his largest customers, and I have detected changes of opinion and attitude among some of the

library suppliers during the short time of this study. But the way is by no means clearly marked.

No readily available information exists on the type of numbers analysis a bookseller might need to help him formulate his plans, and from my observations of the state of the art of planning of automated acquisitions systems, it is too early to collect definite data on the numbers of libraries that are specific in their plans, timetables, and requirements in telecommunications and content of records. The numbers will change as more is known about costs of these systems and expenditure levels from parent institutions or funding bodies. Some libraries will not be able to pioneer change but will accept a standardized model available sometime in the future when development costs have been paid by others and when more working models exist for libraries to study and adopt. Those librarians who view the situation negatively or in the very short term may change when they see successful systems in operation. This is not to say that all librarians are ambivalent or indecisive. Perhaps it is better stated that most are interested but are content to wait and see what happens. Most librarians interviewed had a general acceptance of the scenario, however vague in detail, in which libraries would be in direct electronic communication with the booksellers who in turn would be using similar connections with publishers. Unfortunately, where there is need for financial investment and planning based on commitment, a wait and see attitude impedes progress and, as with Teleordering, may adversely affect future developments for all libraries. As it stands now, developments will depend upon far sighted persons among librarians and booksellers who will see the way through for their colleagues.

What is known about the market if not its true size are its general characteristics. These were compiled in a previous attempt to analyze the total market for automated services in British libraries. In 1976, the British Library's Library Automation System and Service Options Study Committee (LASSOS) commissioned a feasibility study for the provision of automated services for the library community. Its consultant, Alan Styles, prepared two reports in which he described the general library market for automated services[1] and an approach to establishing the size and distribution of the market for automated services.[2] He recommended that studies be undertaken to establish basic cost data for catalog production, circulation control, and acquisition and ordering and to determine how users will make use of services from external agencies. Only one of these studies has been carried out, a cost study and examination of the market for cataloging services.[3]

A brief summary of Styles' description of the market for automated services from the first study is included here for it is my observation that it is still relevant to acquisitions services.

Prospective users are in the main unfamiliar with benefit and modes of operation and value they may place on the service.

Provision of library automated services is highly capital intensive. Unit cost is critically dependent on volume.

Market for service in the U.K. is new and virtually unknown.

The period of rapid growth has come to an end. Automation will be considered in light of shrinking budget.

If improved servicing of library users proves an inappropriate attraction to a service, then the market will depend solely on the ability of the service to reduce current costs. However, the true cost of an activity is rarely perceived before use of a system. Perceived cost may be a small fraction of the full cost. A service must be priced in relation to the perceived cost for the library of the present system it is to replace. A price, therefore, can be set at a cost at least equal to current methods. In practice, the highest price is well below this to provide for an incentive for change.

It is necessary to infer price levels that users may be prepared to pay and from this infer the volume of usage of the service.

There exist a number of different classes of user with different performance requirements, bibliographic standards and different record handling activity with wide variance between them.

One of the most problematical aspects of the market is, as Styles points out, and all booksellers who have looked into this market already know, the wide variety of users. However, one response common among the librarians was that their plans included the integration of the acquisitions and cataloging records into a library database that would have multiple access points and provide information to different departments for different functions. Therefore, an examination of the method of catalog production already in operation in a library is a general guideline for the type of approach a library may take toward integrating acquisitions data and, in particular, an indication of the source, content, and form of the order record which will reside on the library data file until upgraded into a catalog record and transferred into the issue system. It is here that a bookseller needs to look to determine the type of data he may be asked to provide and how it might be transmitted into the system.

All systems of catalog construction and maintenance which have a number of users provide some degree of planning information as they cluster a number of libraries around a common set of technical and bibliographical requirements. British libraries approach their catalogs in a number of ways: independent users of MARC tapes; independent computer based systems that do not use MARC; cooperatives; LOCAS; service bureaux; turnkey systems; and manual. Only the libraries with catalogs in the first three groups have any specific data on the types of data and interfaces they would require. The cooperatives are in the planning stages of their acquisitions systems and most of the independent computer based systems in public and university libraries already have some form of order

system with some links to the catalog they are looking to upgrade. Libraries in the last four groups have no collective approach.

Independent systems Libraries that plan to have integrated circulation, cataloging, and acquisitions on their own computer have multiple options with booksellers. Since much of their ordering is done in advance of publication or is ordering of new books, use of a bookseller's files is quite attractive, especially if the order placement transaction will return an acceptably formated machine readable record for entry on the library's catalog as a temporary record to be upgraded when the cataloging is done. In this way the library may not need to create a large number of records but use those already residing in the database of the bookseller. To make this feasible for libraries is the existence of records with acceptable content and transmission capabilities from numerous booksellers. Those booksellers with the largest databases in acceptable format stand to attract the user of this type of interface. Intelligent terminals will be able to transmit orders at high speed to selected library booksellers and accept similar transmissions in reverse. Dial up access would also be available in other areas of the library for use in verification or reference inquiries by book selectors or reference staff.

Cooperatives If the cooperatives carry out their current plans, members will have no need for bookseller records to be placed into the catalog at time of order. Libraries will use the bibliographic records in the databases or create records for books not in the databases. These systems eventually would be able to transmit these orders to selected booksellers by telecommunications and the bookseller would have to interface them with his order entry system. Depending upon the mode of telecommunication and the technical openness of the cooperative, booksellers should be able to send messages back to their customers via the cooperative's central computer. Cooperatives with plans for distributive processing of local acquisitions data would also allow a library to use special services of the bookseller. This, of course, assumes that cooperatives will have high enough funding levels to develop software, and that libraries will recognize the cost effectiveness of online manipulation of their records.

LOCAS Many users of LOCAS do not have access to equipment for storage and manipulation of large files or as in the case of public library systems, have chosen not to use the county computer for this function. They will not necessarily be interested in MARC compatible records to integrate into the database. They may be interested in programmable terminals on which would run software to produce orders, use a bookseller's database to produce or receive order records, hold order files, and request catalog records from the British Library services.

Service Bureaux Users of service bureaux need not have to make investment in specialized staff, programming, or hardware. The library would be online to its files which are held by the service bureau which would bear the responsibility of transmitting compatible information between the library and bookseller. The service bureaux would have the staff to do the programming to use bibliographic files of the booksellers and produce acceptable order records for their subscribers.

Turnkey Systems Alan Seal, co-author of the study based on Styles reports, projects that the future for cataloging systems will show "substantial growth" in turnkey packages, consisting of hardware and software so that processing of records from external sources is done in house and that the purchase of these systems will be by a large number of libraries with smaller than average accessions.[4] Turnkey systems' appeal is their comparatively low price which is derived from a standardization of procedures and products which spreads the development costs among a number of users. The turnkey systems which integrate multiple functions being developed currently appeal to larger libraries that have the funds for purchase of all the needed hardware and original programming services. With the increase in customers who do not wish to pay for any customization, the prices for the off-the-shelf systems should attract smaller libraries. At least one American turnkey system supplier has a two level approach geared in equipment and price to different sizes of customers. It is assumed that these systems would be able to interface, eventually, with booksellers. None of the librarians with whom I have discussed this had written this in as a specification of a system being developed with a turnkey supplier, and Boss notes this in his review of the American scene.[5]

Manual catalog systems, of course have the greatest number of options for automating parts or all of their bibliographic systems. Realistically, because of the size of operation and funds of libraries who have not attempted automation to date, these libraries will probably look for low cost packages to automate only parts of their system. Here the least complex bookseller interaction is desireable in order to be handled by programmable terminals which will perform multiple functions in the library.

Technical problems of interfacing foreign systems

Librarians have found that as they have automated different processes and functions in isolation from each other, they have developed an array of input requirements, equipment, and methods of operation. For example, some data will be handled by punched cards or tape in batches; other material is entered into a minicomputer via VDU and other material is input through a telecommunications link

to an external database. In addition, the procedures that link any two automated functions may be manual. All library programs that run on different computing equipment and are handled by different programs in different languages require interfaces if functions are to be brought into one system. Additional problems exist when some of the computing equipment data or programs exist outside the library. Libraries with in house computer facilities and systems staff have been able to provide some of their own interfaces for using bibliographic information from the catalog to feed the issues system. Some have found the bridges clumsy and unworkable and have done total system reqrites at great expense. When introducing new modules of turnkey systems the burden of the interfaces is on the system supplier who provides for this by wiring two identical minicomputers together and by writing all programs for all modules in compatible software. But computer to computer interfaces of foreign systems on which full exploitation of the possibilities of library/bookseller integration of systems requires more technically difficult, and hence more expensive, solutions. Boss discusses this in the American context. "Requirements for computer to computer communication among 'foreign' or dissimilar systems requires the adoption of protocols or standards for interacting or linking systems. There are at present no protocols for the electronic communication of digital information among libraries in a network. A number of protocols developed for other applications do exist. Those might be used in the development of protocols for libraries, but a great deal of additional work will have to be done."[6]

He goes on to mention the protocols developed by the National Commission on Libraries and Information Science (NCLIS) and the National Bureau of Standards (NBS) for applications tasks done at different sites in a network to communicate without regard to difference in equipment or operating systems, but such protocols are for use in a national cataloging network and the NCLIS/NBS task force recommended acquisitions and circulation be handled locally and not interface A Canadian effort has also concentrated on shared cataloging, as is the approach of the Cooperative Automation Group.

The ability to develop such protocols outside the network context is quite within the state of the art, but the cost of programming necessary to develop specific interfaces is high. Boss concludes that it is unlikely that American libraries can expect their system vendors to supply computer to computer interfaces between foreign systems in the near future. Here it must be pointed out he is discussing equipment for running library operations on in house systems developed by vendors who have no vested interest in the use or transfer of the data.

Library-bookseller interfaces will be somewhat different for it is the data

transferred that is the key to both systems. They too will need to follow as yet unformulated protocols. Most interfaces will be terminal to computer because they are easier to design and implement, and they will allow records to be called up in one system and transferred to another by action of the terminal operator. While these interfaces are being developed, libraries will use machine readable records in batches supplied on tape or disc by library suppliers at the end of agreed upon period of ordering, but this type of approach to transfer of information still requires standardization of formats used on the tapes and discs.

In the United Kingdom there have been two attempts at addressing the problems of library/bookseller machine interface, one in 1977 and the other by the MARC Users' Group Working Party of 1981. The first on content and format sunk into the files of unpublished reports, perhaps for its specificity and complexity and because not enough thought had gone into it by the proposers of the survey on which it was based and by the respondents. The current attempt is as yet undebated and unratified by the MUG membership.[7] It contains a set of minimum standards for record content and procedures for library access to a bookseller's database. The Working Party has recognized that further work is necessary. The recommendations are so minimal that they cannot possibly change the functioning of any library supplier having the facilities available currently. Thus, a criticism of the recommendations is that they reflect too closely the current practices of the few large firms that are in public library supply and relate only to the short term. They do not address the area of transmission of records back to libraries or booksellers interaction with cooperatives. They do not recommend the use of MARC variable length records, although the Working Party had agreed to incorporate existing standards. The recommendations are prefaced by a need for flexibility on part of bookseller and library and therein subvert the usefulness of their efforts. It appears that there is an underlying assumption that no one will need to change his approach, programs, equipment and that there still can be standards that apply to all. If no bookseller or library systems were in operation and all new systems were to be designed around minimum standards, then this approach would work. But where there is already a wide variation in approaches, painless/costfree standardization in libraries and trade is impractical to propose and improbable to imagine what effect the standards will have.

On the positive side, this attempt should focus attention on the issues and bring a higher level group with wider representation from trade, cooperatives, and libraries. It is imperative that standards be set with the broadest view of developments so that minimums will not be the accepted level. Librarians should make clear just what type of machine readable records they will need and what they will be willing to pay for developing the system or for the use of the

records if the library standards demand more of booksellers than their systems already provide. Much of what libraries express as their need in record content and format is for cataloging data. In the United Kingdom, most library suppliers are not in the catalog supply business but some firms may find a new aspect of service and business in supplying cataloging data and books for libraries that do not use cooperatives, LOCAS or the MARC tapes.

In the British book trade there are no standards for machine communication other than the defacto operating standards in Teleordering. Teleordering has created its own communication protocols and booksellers and publishers must pay for the installation of equipment to convert information to or from Teleordering into format acceptable to their systems. If Teleordering is withdrawn, the issue of standards for machine readable communication will immediately arise for those booksellers and publishers who wish to substitute some other telecommunications mode to maintain the benefits they have received from Teleordering.

In the United States, where there is no teleordering concept at the tradewide level there has been planning for one-to-one publisher bookseller machine based communications using industry developed standards. BISAC has been at work for several years devising standard formats for machine readable transmission of orders invoices and returns that are acceptable to the book trade and within the context of American National Standards Institute and International Standards Organization guidelines.[8] They have agreed on magnetic formats and are turning to online transmissions. The practicality of these efforts is based on the book trade structure where many more bookstores rely on wholesalers than do in the United Kingdom. The large wholesalers with multiple locations and the large booksellers with multiple locations will be using these formats to communicate with publishers on a regular basis. In some instances booksellers may choose dedicated terminals to wholesalers who offer stock status, online ordering, and data processing services. In other instances they may communicate with publishers or wholesalers on the time sharing packet switched communications networks that allow for inexpensive telecommunications.

The library supply bookseller in the United States is caught in the middle with his suppliers and trade association using the BISAC fixed field format and many of his customers using the variable length MARC format. Indeed, most medium to large library suppliers use the MARC tapes in some way and employ cataloging staff to assist in preparation of book information, but they may not actually keep data on the files in that format. BISAC is examining the need for the variable length formats to assist the library supply sector. As previously stated, OCLC is involved in discussions so that the transmission of its data to booksellers will be in a format acceptable to the booksellers.

Recognizing a trend toward cooperation between groups and sharing of information from databases, the Research Libraries Group Board of Governors recently passed a resolution to encourage computer communication links to the RLG database by urging future system links adhere to the International Standards Organization Basic Reference Model for Open Systems Interconnection, be independent of any specific hardware and software, employ applications protocol for library data exchange outlined by the American National Standards Institute Committee Z39 and the Advanced Data Communication Control Procedures.[9] This resolution is also network orientated, but it is an indication of the recognition of the importance to libraries of the ability to acquire and use in their systems data from numerous sources. It is hoped that the Cooperative Automation Group and other British library and book trade organizations will recognize the need to work toward the design of library systems, including those for book acquisition, that will bring libraries fully into the telecommunications age.

FORECASTS FOR THE FUTURE

All those working on specific aspects of systems described and/or planning extension of their systems to incorporate information from sources outside the library or bookshop realize that any developments that require use of new technology are dependent upon more than their own personal and institutional or corporate plans and actions. There are numerous environmental factors that will influence the speed or limits of progress and the final outcome of the plans of the book trade, library networking, and library/bookseller interfaces. A brief list of such economic, social, political, and technical factors which create the environment for these systems is given below.

Inhibiting Factors

Economic

- A lack of funds for libraries to make capital outlays for hardware and software necessary to make these systems work
- A lack of funds in libraries which will retard the progress of software vendors supplied order packages and integrated systems
- Decreasing library budgets which will reduce library booksellers gross profits from which would come money for improving their systems and offering the computer based services
- The high cost of telecommunications
- An apparent unwillingness on the part of the book trade to invest in tradewide solutions in book ordering and distribution and telecommunications
- Competition among library suppliers which creates uniquely competitive products

Social/Educational

- A widespread lack of awareness in the book trade and libraries of available technological capabilities and their implications for library and booktrade operations
- A lack of proven utility to libraries of acquisitions systems electronically linked to booksellers
- A negative attitude toward change of habits, trade relations, or operations

Political

- The conflicting needs of book trade and libraries which may prohibit adoption of standards
- The conflicting needs within the book trade which may prohibit the adoption of standards

- The conflicting needs among libraries which may prohibit adoption of standards
- Library cooperatives' vested interests in their current systems

Technological

- A lack of standards and protocols for exchange of data between library and bookseller systems
- A lack of telecommunications required to make these systems work economically
- Libraries and cooperatives systems based on old technology

Facilitating Factors

Economic

- Successful librarians who are able to convince funding bodies of need for capital outlay for integrated systems
- A recognized need for costing library systems and search for cost effective approaches to traditional and new services
- The continuing ability of many library suppliers to maintain profit levels despite declining library budgets
- The economies to be derived for both library and bookseller from interfacing systems
- The competition for business motivating booksellers to use their systems to increase their competitive edge
- The comparative drop in cost of telecommunications and equipment

Social/Educational

- The professional and trade associations involvement in education programs for their members
- A general public use of telecommunications and electronics which will reinforce use in office situations

Political

- A tradition of library collective efforts
- A tradition of booktrade collective efforts
- A tradition of library supplier services
- A possibility of a national database which would free cooperatives to devote their efforts to developing different types of member services

Technological

- The need for standards is recognized
- The requisite improvements in telecommunications are in the foreseeable future
- The storage of increased amounts of data in more compact form at lower cost is under continual development

There are many forecasts of the rate of the march of technology into libraries and into our personal lives and I also must forecast the future of computer based services and direct data transfer between library booksellers and libraries. These are my conclusions drawn from observations, reading, and discussions as presented in the report. The forecasts are presented in two chronological groups but not in rank order of importance or exact time order within the groupings.

The short term - within the next three years:

--Librarians will become aware of a range of options for the use of data in bookseller databases that are only now beginning to surface in bookseller promotional material and public discussions among librarians and the book trade.

-- The stockholding library suppliers will make available their databases for searching, verification and ordering in one way mode while discussing with individual librarians requirements for transmitting information back to the library in other than paper form.

-- The library suppliers will acquire equipment, if it is not already in place, to produce machine readable output for libraries prior to libraries ability to receive transmissions into their computers. Libraries will receive the information on tape or on floppy disc through the post or in booksellers deliveries. Approval shipments will arrive with the machine readable records for entry into a library's system and for order transmission directly into the library suppliers' computers. Reports and invoices will be sent in machine readable form to those libraries that require them.

-- Library suppliers will work out a number of standard packages for libraries to adopt at little extra cost to the library as long as the individual library requirements are generally the same.

-- Public libraries will begin the use of these services with order transmission while working with the individual booksellers, or perhaps collectively with a number of large library suppliers, toward the more technically demanding interfaces. The libraries will make some changes in their systems to accept these records. It is most likely that these beginnings will be between the largest of libraries and the largest of suppliers because of the high number of transactions that would be facilitated and the implicit savings for both.

--Academic libraries will move much more slowly than the public libraries because of the cooperative approach to systems design and because of their reliance on smaller booksellers. The academic librarian's concern with detailed and high quality bibliographic records will make many booksellers records appear inadequate.

few booksellers will have a database of scope and bibliographic quality to attract academics and loyalty to local as yet unautomated booksellers will temper the attractiveness of the larger databases. If a solution to the bookseller interface with the cooperatives is found, many academic librarians will probably place fewer orders with those booksellers who are unable to interact with the cooperatives' systems.

—The user of the cooperatives system will not use library suppliers' databases to any great extent because of the duplicate effort and duplicate costs involved. They may choose to use dial up facilities when searching for items needed more quickly than usual.

--Large library suppliers will work with customers to develop interfaces for direct communication. The largest booksellers with the most computing capacity and the large libraries with large numbers of orders will find mutually beneficial linkages in a variety of ways with the extra programming burden on the bookseller, but paid for by an increased volume of business. Competition among booksellers will be in interfaces for different types of customers and applications programs for use of the bookseller database.

— The booksellers without a large database, retail booksellers and non stock holding library suppliers will be more reactive to developments as they will not have computing capacity or systems staff to work out special customer requirements. They will be able to return machine readable records in tape or disc form if they purchase the equipment and invest in programming. They will be able to receive orders from libraries directly or via cooperatives, but the lack of a substantial database will require them to resort to manual methods in intermediate internal processing before putting the orders into their systems.

—Few if any of the order modules of the circulation based order systems will be ready for interface with booksellers or use in a telecommunications mode.

— Booksellers' software offered to libraries for purchase will be used very selectively by libraries whose experience with the software will be used to market the software to others. If the quality is high and the concepts are correct, word will spread among librarians and assist commercial marketing of this service.

—In the United States the two large library suppliers will continue to market their systems which will be most attractive to libraries which are not members of networks. Other customers may be found among the medium sized academic and public libraries which are part of networks when the network's systems costs are known and comparisons with other approaches may be made. If the OCLC transaction charge is seen to be too costly, the commercial sources of systems may be

more attractive, especially those which can build a link with the library's catalog. Since libraries will prefer to be independent and not involved in a dedicated line situation with one bookseller, software packages will be attractive as will the acquisitions modules of the integrated software systems being developed.

—Other American library booksellers without large databases or systems to offer will be watching OCLC members closely to see how many libraries adopt the acquisitions system. It is to their benefit for the network's acquisitions system to be accepted so that they will be required to make less change to their systems and still be competitive. If a large number of libraries who are their customers decide not to opt for the network solution and develop their own or install commercially supplied software, there will exist a situation similar to that in Britain but complicated by the situation that few library booksellers of this type are currently in the position to accomodate libraries who will be desirous of a direct bookseller interaction.

It is important that during this period, without the existance of any true standards, care should be taken by librarians not to narrow their future prospects by demanding unique specifications that could impede the ability of the bookseller to develop a more generalized application for other libraries or restrict the library's own ability to benefit from future cooperative developments. All library suppliers and particularly those with customers among the membership of cooperatives, should meet with the cooperatives to explore what effects the present system design may have on them and how computer interactions could benefit both the membership and the booksellers. In addition, designers of acquisitions modules of software and hardware systems for libraries should meet with the book trade to determine the components of interfaces while systems are still in development.

The long term (over three years):

-- Large library booksellers will receive orders directly into their computers from libraries as a result of work on protocols and technical interfaces by the trade and libraries.

—Smaller library booksellers will install stock control systems linked with Teleordering which will include the capability to allow libraries' orders to enter the Teleordering system via bookseller codes. Booksellers will develop stock control and order systems even if Teleordering is withdrawn, but the

impetus of direct order entry for libraries will also be withdrawn, for smaller firms will need systems with maximum applications for their investments. With or without Teleordering, how the orders are handled by individual booksellers will be determined by the nature and amount of library supply business.

--More libraries will acquire minicomputers which will allow for more flexibility in relating to the bookseller and sources of cataloging records. The acquisition of the computer will be through a system vendor, or a cooperative distributed processing system, or independent purchase.

--Software acqusitions packages will be available for those libraries which are not part of cooperatives. They will be developed in Britain by booksellers and by the British Library. In the United States they will be developed by booksellers or commercial software houses. This software will be attractive to small to medium libraries and require no heavy investment in computing equipment or staff.

--Bookseller supplied software may be more attractive to librarians when a realistic financial appraisal of the costs of integrating all systems and producing the online catalog is made. It will have to allow choice of source of supply and provide for fund accounting and a catalog link.

--Libraries operating on county or university computers will have to reprogram to comply with standards developed for these transmissions if they wish to receive the benefits of a direct computer link with a wider range of booksellers.

--More standardization and more processing capacity will exist in microcomputers so that smaller libraries should be able to operate multiple functions through programmable terminals.

--For the largest libraries which have computing equipment and staff more options will exist to take parts of externally produced records or systems and combine them in a unique way.

--The non stockholding library supplier and retail bookseller in library supply may lose business in the long term, for they will not have the advantage of a large stock linked database and all its machine generated by-products. When libraries have developed the final plans for their acquisitions systems, they will consolidate their purchase of books and order records among fewer sources. This in turn, will have large library suppliers receive more orders for items they do not generally stock. If they keep these records in their databases, their databases become more valuable for preorder searching and record creation and may draw even more orders as a result. The non stockholding bookseller or retail bookseller who supplies libraries may invest in equipment to transmit reports and records but

only if he can purchase software from a competitor or another source.

--The specialist booksellers and local bookshops will only be able to offer their systems as conduits into Teleordering as their stock is not geared to library supply. Most libraries will operate dual systems to accomodate specialist suppliers as exceptions to the main procedures.

--Publishers small enough to make libraries order directly from them instead of through a bookseller will still require paper based transactions. The publishers with ability to receive orders directly into their computers will not encourage this direct receipt because of the small value of most of the orders. In the United States, the number of orders going directly to publishers will be reduced by libraries and publishers using different communications formats.

--Teleordering will expand to incorporate international orders both to and from abroad so that libraries will benefit from the extended capabilities of their booksellers' systems.

-- Libraries will continue to purchase printed books and acquire means and rights of access to electronic publications which will not replace the great majority of books in the foreseeable future.

In conclusion, the three research questions investigated (see page 4) have been answered positively by librarians and members of the book trade. Bookseller and book trade data handling systems linked to libraries via telecommunications do have potential for use by libraries specifically because of the benefits to be derived for each group: ease of data entry; elimination of duplicate effort; identification of publications' availability; speed of processing; increased level of services to libraries; increased business; and staff savings. Because the requirements for equipment, specialized staff and computer programming cannot be easily met by every library bookseller at his present level of service capabili librarians will find that they may have to choose among library booksellers from a different or expanded set of criteria and that not all booksellers will want to or be able to meet the new criteria. Booksellers will also be guided by trade efforts in their relations with publishers and will find the decade ahead most decisive of their future as they adapt their present pattern of business and operations to cope with or encompass the developments that are being urged upon them by their customers and their trade. Therefore, it is hoped that this report will assist both librarians and booksellers to see the pattern of developme in the use of computers and telecommunications that is occurring within the other group and what effect or consequence this will have for them. I am convinced

that libraries and the book trade cannot ignore the telecommunications and microchip revolutions. Within this generation of librarians and booksellers, the quibbling about why the trade is not suitable for non print communication and the barriers to library acquisition and transmission of data in other than paper format will recede. The paper intensiveness of library and book trade operations will be reduced, and human resources will be concentrated on acquisition and transfer of information to the library's users.

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4. Book Industry Systems Advisory Committee, Annual reports and Minutes.

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APPENDIX

APPENDIX

The following persons gave their time and consent to be interviewed.

Libraries and Library services

Baumfield, Brian, Birmingham City Libraries.
Bishop, Jane, BLAISE.
Bomford, Theresa, British Library Research and Development Department.
Buxton, E.M., School of Geography Library, Oxford University.
Clements, Francis, College of St. Mark and St. John Library.
Cox, Nigel, Oriel Computer Services.
Crooke, Michael, Dyfed County Computer Services.
Diamond, Robert, Glasgow University Library.
Dudley, Martin, Hertfordshire County Library.
Earl, Karl, Kent County Library.
Fellows, Stanley, Lancashire County Library.
Foulkes, John, Birmingham City Libraries.
Gallivan, Bernard, SCOLCAP
Galt, J., Devon County Library.
Horsnell, Verina, Library Association.
Jackson, P.F., Oxford Polytechnic Library.
Johnson, Roger, University of Birmingham Library.
Jones, Gwyn Lewis, Dyfed County Library.
Jordan, Paul, SWALCAP.
Kidd, Tony, Aston University Library.
Law, Derek, Edinburgh University Library.
Leggate, Peter, Cairns Library, John Ratcliffe Hospital.
Lloyd, Thomas, University College Aberystwyth Library.
Lovesy, Dr. I., University of Reading Library.
Marriott, Peter, Edinburgh City Libraries.
Martin, David, British Library Automated Systems and Services Department.
Metcalfe, G. Nigel, O.C.L.C. (Europe) Ltd.
Mullis, Albert, British Library and Co-operative Acquisition Group.
Pritchard, A., Librarian, City of London Polytechnic.
Reeve, Peter, Essex County Library.
Richard, Steve, Bodleian Library, Oxford University.
Pinnock, Dr. H.A., British Library Research and Development Department.
Ralls, Marion, SCOLCAP.
Seddon, John, Derbyshire County Library.
Smith, Peter, LASER.

Vickers, P.H., Aslib, Research and Consultancy Division.
Wall, Raymond, Loughborough University of Technology.
Walsham, Kate, Glasgow University Library.
Watson, Robert, B.L.C.M.P.
Wight, Tony, Consultant, London.

Book Trade

Barnett, John, Systems Software Teleordering, Ltd., Sunbury on Thames.
Blackwell, Julian, Booksellers Association and Blackwells, Oxford.
Broadbent, Michael, Parker and Sons, Oxford.
Collier, Harry, Learned Information, Abington.
Brown, Warwick, Galloways, Aberystwyth.
Burchell, Keith, Hudsons, Birmingham.
Connolly, William, Woolston and Blunts, Nottingham.
Cousins, Grahame, University of Leicester Bookshop.
Dunn, Justin, Morley Book Co., Leeds.
Fairlie, Robin, Woolstons and Blunts, Nottingham.
Foreman, Lewis, H.M.S.O., London.
Galloway, Mr., W. & H. Holmes, (Books), Glasgow.
Gilmore, Ian, Lucas Bookselling Services Ltd., St. Albans.
Hargreaves, Ian, Holt Jackson Book Company Ltd., Lytham St. Annes.
Hoban, Philip, Askew and Son Ltd., Preston.
Holmes, Dr. Philip, Blackwells, Oxford.
Hodder Williams, Mark, Hodder and Stoughton, Sevenoaks.
Jones, Trevor, Woodfield and Stanley, Huddersfield.
King, Christopher, Data Services, Wargrave.
Lawrence, Karl, Granada Publishing, St. Albans.
Lisle, J.T., Cambridge Jackson, Birmingham.
Mackintosh, R., William Collins, Glasgow.
McLennan, Harry, William Collins, Glasgow.
Martin, Sylvia, Hudsons Library Services, Birmingham.
Meadows, Jack, Primary Communication Research Centre, University of Leicester.
Peters, Malcolm, J.S. Peters and Son and Peters Computers, Birmingham.
Pocock, Kate, Trades Practices Secretary, Booksellers Association of G.B. and N. Ireland.
Read, John, W.H. Smith Retail Group, Swindon.
Shah, J.R., Kosmos Book Distribution, London.
Simmonds, Louis, Simmonds Booksellers, London.
Sugden, Christopher, University Bookshop, John Smith Ltd., Glasgow.

Sweeten, F. Christopher, Sweetens Computer Services and Sweetens Bookshops, Preston.

Taylor, Michael, Holt Jackson Book Co., Ltd., Lytham St. Annes.

Thin, Ainslie, James Thin Ltd., Edinburgh.

Wagstaff, A.R., Faber and Faber, Harlow.

Waring, Jonathan, Collets Library Service, Wellingborough.

Wasserfab, Peter, Letts, London.

Whitaker, David, Whitakers, London.

Winter-Goodwin, Benjamin, AE Data Services, Wargrave.

The following persons provided information through correspondance

Aldus, Judith, University of New Brunswick Library, Fredericton, N.B.

Coutts, John, Coutts Library Services, Niagara Falls, Ontario.

Dorn, Knut, Otto Harrassowitz, Wiesbaden, West Germany.

Doyle, Francis M., U.S. Army Library, Fort Munroe, Virginia.

Ray, Edgar, Preston Polytechnic Library.

Ellis, Richard H., Memorial University of Newfoundland Library, St. Johns, Newfoundland.

Farrington, June, University of Lancaster Library.

Fast, Barry, Taylor Carlisle, New York, New York.

Kershner, Lois M., Research Libraries Group, Stanford, California.

Knapp, John, Ringgold Management Systems Inc., Beaverton, Oregon.

Ligenbrink, Georg, Ligenbrink Gmbtt & Co., Hamburg, W. Germany.

Lockman, Edward J., The Book House, Jonesville, Michigan.

Lustig, Stephen, IBIS Information Services, Inc., New York.

Patrick, Ruth, Wayne State University Library, Detroit, Michigan.

Paul, Sandra K., S.K.P. Associates, New York, New York.

Regan, Muriel, Rockefeller Foundation Library, New York.

Thomas, Judy, Brodart Inc., Williamsport, Pennsylvania.

Uszak, Andrew, R.R. Bowker, New York.

Wilson, D.V., Atomic Weapons Research Establishment, Aldermaston.

Ziegman, Bruce, Washington Library Network, Olympia, Washington.

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